Details of Grid Events during the Month of July 2023 in Northern 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	Uttar Pradesh	01-Jul-2023 06:39	01-Jul-2023 10:34	3:55	0	0	0.000	0.000	45312	52864	i) 400/220kV Bareilly(UP) has double main transfer bus scheme at both 400kV & 220kV level. During antecedent condition, 400/220 kV 315 MVA ICT 3 at Bareilly(UP), 400 KV Bareilly-Unnao (UP) Ckt-1, 400 KV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 and 80 MVAR Bus Reactor No 1 at 400KV Bareilly(UP) were connected to 400KV Bus 1 at Bareilly(UP) and rest of the elements were connected to Bus 2. ii) As reported, at 06:39 hrs on 01st July, 2023, 400KV Bus 1 at Bareilly(UP) tripped due to bus bar protection mal-operation and hence all the elements connected to Bus 1 also tripped and Bus 1 became dead. iii) As per PMU at 400kV Bareilly(PG), no fault is observed in the system. iv) As per SCADA, no change in demand is observed in UP control area. After tripping load shifted to remaining 400/220/33 kV 315 MVA ICT 1 & 2 at Bareilly(UP).	1) 400KV Bus 1 at Bareilly(UP) 2) 400/220 kV 315 MVA ICT 3 at Bareilly(UP) 3) 400 KV Bareilly-Unnao (UP) Ckt-1 4) 400 KV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 5) 80 MVAR Bus Reactor No 1 at 400KV Bareilly(UP)
2	GI-1	Himachal Pradesh	01-Jul-2023 16:08	01-Jul-2023 16:14	0:06	0	150	0.000	0.236	54276	63555	i) 220/66kV Uperlanangal (HP) has double main bus scheme at both 220kV & 66kV level. During antecedent condition, power was flowing through 220/66kV 80/100MVA ICT-1 & 2 at Uperlanangal(HP) to the feeders connected at 66kV level of Uperlanangal (HP). ii) As reported, at 16:08 hrs on 01.07.2023, 220/66kV 80/100MVA ICT-1 at Uperlanangal(HP) tripped on R-Phase overcurrent earth fault (Ir=~1.12kA) on fault in 66kV feeder. Due to this, 220/66kV 80/100MVA ICT-2 at Uperlanangal(HP) also tripped due to overloading. This resulted in further unloading of feeders connected at 66kV level and load loss at Uperlanangal (HP). iii) As per PMU at 400kV Nallagarh(PG), no fault is observed in the system. HP has been communicated to share the DR/EL for confirmation of fault nature and location. iv) As per SCADA, change in demand of approx. 150MW is observed in HP control area. v) As reported by SLDC-HP, similar events are observed at 23:08hrs on 24.06.2023, 23:46hrs on 26.06.2023, 07:08hrs on 27.06.2023, 04:26hrs and 09:29hrs on 28.06.2023 where 66KV Ambuja and Sanerh feeder relay operated and as fault did not clear by opening of these two feeders, further tripping of 220/66kV 80/100MVA ICT-1 & 2 at Uperlanangal(HP) occured. P&T team visited at site on 28.06.2023. All settings were checked and found okay, but reason for tripping was not found. P & T Team again visited at site on 02.07.2023 after tripping on 01.07.2023 and testing and assessment of fault is in progress.	1) 220/66kV 80/100MVA ICT-1 at Uperlanangal(HP) 2) 220/66kV 80/100MVA ICT-2 at Uperlanangal(HP)
3	GI-1	Delhi	03-Jul-2023 12:24	03-Jul-2023 12:32	0:08	0	245	0.000	0.349	62300	70281	i) During antecedent condition, 220kV Bawana –Shalimarbagh Ckt.-I, 220kV Shalimarbagh – Wazirpur Ckt. I & II, 220kV Shalimarbagh – DMRC Ckt. –I, 220kV Shalimarbagh – SGTN Ckt. I&II and 220kV Shalimarbagh – Rohini-I Ckt –I were connected to 220kV Bus-1 at Shalimarbagh(DTL) and 220kV Bawana –Shalimarbagh Ckt.-II, 220kV Shalimarbagh – DMRC Ckt. –II, 220/33kV 100MVA Pr. Tr. –I, 220/66kV 100MVA Pr. Tr. –II, 220/33kV 100MVA Pr. Tr.-III, 220kV Shalimarbagh – DMRC Ckt. –II were connected to 220kV Bus-2 at Shalimarbagh(DTL). 220kV Bus Coupler at Shalimar Bagh was in off position. ii) As reported, at 12:24 hrs, 220 kV Bawana – Shalimarbagh (DTL) Ckt-1 tripped on R-B-N double phase to ground fault. PLCC communication was not healthy during the incident and hence line tripped from Bawana end only. There are two relays installed at Bawana end for protection of 220 kV Bawana – Shalimarbagh (DTL) Ckt-1: distance relay (Main-I) and differential relay (Main-II). Distance relay operated during this event at Bawana end, but DR of the same is not available because of memory overwrite. iii) As per DR of differential relay installed at Bawana end of 220 kV Bawana – Shalimarbagh (DTL) Ckt-1, line tripped on R-B-N double phase to ground fault (fault sensed in zone-2) with fault current of 9.96kA and 1.35kA in R and B phase respectively and fault clearing time of 432ms. iv) As per PMU at Bawana(DTL), R-B-N double phase to earth fault is observed with delayed fault clearing time of 440 ms. v) As per SCADA, load loss of approx. 245MW is observed in Delhi control area is observed. vi) As reported, load on Shalimarbagh was restored by charging 220 KV Shalimarbagh-Rohini Ckt-1 at 12:32 hrs.	1) 220 kV Bawana – Shalimarbagh (DTL) Ckt-1
4	GI-2	Himachal Pradesh	09-Jul-2023 10:28	09-Jul-2023 16:35	6:07	0	0	0.000	0.000	43993	47878	i) During antecedent condition, 77MW unit-1,2&3 all were under shutdown due to high silt (~9000PPM) condition since around 23:33 hrs of 08th July 2023. ii) As reported, due to heavy discharge in the river, land slide occurred and led to the collapsing of tower no. 1 from Chamera-III end at 10:28 hrs. Collapsing of tower no.1 further resulted into collapsing of gantry of 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 & 2 at Chamera_3 end. Collapsing of gantry led to the damage of 02 nos CVT, 03 nos. of lightening arrestors & 01 no Wave trap at Chamera_3(NH) end. iii) As reported, at the time, bus bar protection of 220kV Bus-1&2 at Chamba(PG) operated which led to the tripping of all the elements connected at 220kV side of Chamba(PG). Details of faults at Chamba(PG) end are yet to be received. iv) As per PMU, B-N fault with delayed clearance in 560msec followed by Y-N fault which cleared within 100msec is observed. v) As per SCADA, no change in demand and load is observed.	1) 220KV Bus 1 at Chamba(PG) 2) 220KV Bus 2 at Chamba(PG) 3) 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 4) 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-2 5) 400/220 kV 315 MVA ICT 1 at Chamba(PG) 6) 400/220 kV 315 MVA ICT 2 at Chamba(PG) 7) 220 KV Chamba(PG)-Karian(HP) (HPSEB) Ckt-1
5	GD-1	Uttarakhand	14-Jul-2023 02:48	14-Jul-2023 05:16	2:28	108	35	0.232	0.058	46478	60431	i) During antecedent condition, 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP were generating approx. 36MW each respectively. ii) As reported, at 12:24 hrs, station transformer (33KV/0.4KV) which is connected on tertiary winding of 400/220 kV 315 MVA ICT 2 at Srinagar(UK) damaged with heavy blast and hence ICT 2 tripped on differential protection operation. iii) The station T/F was placed under the 220KV Bus 1 at Srinagar(UK). Due to blast in station T/F, heavy arc developed and T/F oil spread on 220 KV Bus 1. Therefore, bus fault created and bus bar protection operated at 220KV Bus 1 at Srinagar(UK). iv) During the same time, 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2 and 400/220 kV 315 MVA ICT 1 at Srinagar(UK) also tripped. v) The power generated by 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP were evacuating though 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2. Hence, due to tripping of both 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2, 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP tripped due to loss of evacuation path and blackout occurred at 220kV Singoli Bhatwari HEP. vi) As per DR of 400/220 kV 315 MVA ICT 2 at Srinagar(UK), ICT tripped on differential protection operation (3 phase to ground fault is observed). vii) As per DR of 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (end) (PTCUL) Ckt-1 & 2, lines tripped on Y-N phase to ground fault (fault sensed in zone-4 indicating bus fault) with fault current of 510 A in Y phase. viii) As per DR of 400/220 kV 315 MVA ICT 1 at Srinagar(UK), Y-N phase to ground fault is observed with fault current of 2.33kA and 4.62kA in respectively HV and LV side of Y-phase of the ICT. ix) As per PMU at Roorkee(PG), 3-phase to ground fault followed by Y-N phase to ground fault is observed with fault clearing time of 80 ms. x) As per SCADA, load loss of approx. 35MW is observed in Uttarakhand control area and generation loss of approx. 108MW at Singoli Bhatwari HEP are observed.	1) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 2) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-2 3) 400/220 kV 315 MVA ICT 1 at Srinagar(UK) 4) 400/220 kV 315 MVA ICT 2 at Srinagar(UK) 5) 33MW Unit-1 at Singoli Bhatwari HEP 6) 33MW Unit-2 at Singoli Bhatwari HEP 7) 33MW Unit-3 at Singoli Bhatwari HEP
6	GI-2	Rajasthan	18-Jul-2023 19:56	18-Jul-2023 22:37	2:41	0	0	0.000	0.000	58065	69404	i) 400/220kV Bhadla(Raj) has one and half breaker scheme at 400kV side and double main & transfer bus scheme at 220kV side. ii) During antecedent condition, 400/220 kV 500 MVA ICT 1&3 at Bhadla(RS) were carrying ~141MW each and 400/220 kV 500 MVA ICT 2 at Bhadla(RS) was not in service. iii) As reported, at 19:56hrs, R-N phase to earth fault occurred on 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-2. Fault was in Z-1 from Bhadla(RS) end and in Z-2 from Bhadla(PG) end. iv) On this fault, Main-1 relay (distance protection) at Bhadla(RS) of 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-2 didn't operate due to issue in DC supply and Main-2 relay (differential protection) at Bhadla(RS) also didn't operate due to issue in signal communication. (Rajasthan has been communicated to resolve the issues in Main protection of the line at the earliest) v) Distance protection at Bhadla(PG) end of 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-2 sensed the fault in Z-2. However line tripped in ~250msec on directional earth fault O/C protection operation. As reported, TMS setting of the O/C relay was sensitive and same has been corrected to ensure its proper operation. vi) Distance protection of adjacent 400kV lines at Bhadla(RS) sensed the fault in Z-4 from Bhadla(RS) end. 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-1 tripped from Bhadla(RS) end in Z-4 with ~160msec delay and 400 KV Bhadla-Ramgarh (RS) Ckt-1 & 2 tripped from Ramgarh end in Z-2 with ~300msec delay (Z-4 time delay of these lines at Bhadla(RS) was 450msec). Rajasthan has been communicated to review the time delay setting of distance protection relay and keep them in line with the NR protection philosophy. vii) As fault was also fed by 220kV side through ICTs, it cleared with the tripping of 220kV Bus sectionalizer on O/C E/F with ~200msec delay. viii) 220kV Bus-1(B) was remain intact. ix) As per PMU at Bhadla(PG), R-N fault with the delayed clearance in ~320msec is observed. x) As per SCADA, no change in load in Rajasthan control area is observed.	1) 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-1 2) 400 KV Bhadla(RS)-Bhadla(PG) (PG) Ckt-2 3) 400 KV Bhadla-Ramgarh (RS) Ckt-1 4) 400 KV Bhadla-Ramgarh (RS) Ckt-2

Details of Grid Events during the Month of July 2023 in Northern 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	Rajasthan	20-Jul-2023 13:53	20-Jul-2023 15:29	1:36	2526	0	4.140	0.000	61013	74741	i) On 20th July 2023 at 13:53 hrs, as reported, R-N phase to earth fault occurred on 220kV Bhadla(PG)- MRPL ckt, R-ph jumper snapped at tower location no. 56 ii) On this fault, CB at Bhadla(PG) end of the MRPL line (connected at 220kV Bus-1B) didn't open and therefore, LBB of MRPL bay at Bhadla(PG) operated. iii) LBB operation led to the tripping of 400/220kV 500 MVA ICT 5 at Bhadla(PG) and 220kV lines to RE stations i.e., MRPL, CSPJL, ACME & MAHOBA connected at 220kV Bus-1B at Bhadla(PG). iv) As per PMU at Bhadla(PG), R-N phase to earth fault with delayed clearance in 320msec is observed. v) At the same time, drop in RE generation at RE stations connected at other ISTS pooling station in Rajasthan RE complex also occurred on LVRT. vi) As per PMU, total drop in RE generation was approx. 2526MW. Out of total ~2526MW approx. 770MW lost due to tripping of RE stations on LBB protection operation as mentioned above and rest ~1750MW RE generation was due to partial/delayed recovery of RE generation after LVRT. Out of this ~1750MW RE generation, ~850MW RE generation recovered within 02 min of the event.	1) 220 KV Bhadla(PG) - Bus 3 2) 220 KV Bhadla(PG)-ACME Solar(ACM) (ACME) Ckt-1 3) 220 KV Bhadla(PG)-Mahoba Solar(Adani) (Adani) Ckt-1 4) 220 KV Bhadla(PG)-CS_Jodhpur SL_BHD_PG (Cleansolar_Jodhpur) (Cleansolar_Jodhpur) Ckt-1 5) 220 KV Bhadla(PG)-Mahindra SL_BHD_PG (MAHINDRA) (MAHINDRA) Ckt-1 6) 400/220 kV 500 MVA ICT 5 at Bhadla(PG)
8	GD-1	Uttarakhand	21-Jul-2023 00:44	21-Jul-2023 01:50	1:06	108	30	0.200	0.040	54019	74608	i) During antecedent condition, 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP were generating approx. 36MW each respectively. ii) As reported, at 00:44 hrs, 220 kV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2 tripped from both ends on Y-N phase to earth fault. Both the circuits are on same tower. iii) As per DR of Singoli Bhatwari end, fault occurred on both the lines. Fault was in Z-1 (~54km) from Singoli Bhatwari end. A/R started in both the lines however, in ckt-1 it didn't complete due to DT received from Srinagar after ~50msec end and in ckt-2 line tripped after ~300msec on under voltage stage-2 operation. iv) As per DR of Srinagar end, fault occurred on both the lines. Fault was in Z-2 (~67km) from Srinagar(UK) end and fault current was around ~1.5kA. Carrier received from Singoli Bhatwari end however, A/R didn't operate and three phase tripping occurred instantaneously. v) Due to tripping of both 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & 2, 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP tripped due to loss of evacuation path. vi) As per PMU at Roorkee(PG), Y-N phase to ground fault with no A/R operation and cleared within 100 ms is observed vii) As per SCADA, load loss of approx. 30MW is observed in Uttarakhand control area and generation loss of approx. 108MW at Singoli Bhatwari HEP are observed.	1) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 2) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-2 3) 33MW Unit-1 at Singoli Bhatwari HEP 4) 33MW Unit-2 at Singoli Bhatwari HEP 5) 33MW Unit-3 at Singoli Bhatwari HEP
9	GD-1	Delhi	23-Jul-2023 20:21	23-Jul-2023 20:25	0:04	0	314	0.000	0.443	51817	70881	i) 220kV side of 400/220kV Mandola(PG) has double main & transfer bus scheme and 220/66/33kV Gopalpur(DTL) & 220/66kV Narela has double main bus scheme. ii) During antecedent condition, 400/220kV 500MVA ICT-4, 220kV feeders i.e., Gopalpur ckt-1 & Narela ckt-2 were connected at 220kV bus-1 at Mandola(PG) and 400/220kV 500MVA ICT-2, 125MVAr bus reactor-1, 220kV feeders i.e., Gopalpur ckt-2 & Narela ckt-1 were connected at 220kV Bus-2 at Mandola(PG). ICT-2&4 were carrying approx. 215MW each, 220kV Narela D/C were carrying approx. 72MW each and 220kV Gopalpur ckt-1 & 2 were carrying approx. 87MW & 153MW respectively as per SCADA data. iii) Load of 220kV Gopalpur S/s and 220kV Subzi Mandi S/s was connected through 220kV Mandola-Gopalpur Ckt. I&II and load of 220kV Narela S/s was connected through 220kV Mandola – Narela Ckt. I&II. iv) As reported, at 20:21 hrs, dropper jumper of CT at 220kV side of 400/220 KV 500 MVA ICT-4 at Mandola(PG) snapped which led to the differential current in ICT-4. v) As per PMU at Mandola(PG) & DR of 220kV feeders at Mandola(PG), there was no fault in system. However, bus bar protection at 220kV side operated and elements connected to 220kV Bus-1&2 tripped. 220kV Bus-3&4 and elements connected to them were remained intact. vi) As there was no fault in system, operation of bus bar protection was due to maloperation of bus bar relay. As reported, bus bar relay at 220kV side is ALSTOM FAC34 (conventional electromechanical relay) and thus DR of the same is also not available. vii) As reported, new bus bar panel has been procured and commissioing work of new bus bar protection is in process. viii) Due to tripping of 220 KV Mandola(PG)-Gopalpur(DTL) (DTL) Ckt-1 & ckt-2 supply to 220/66/33kV Gopalpur(DTL) S/s lost and load of Gopalpur S/s (~157MW) and Sabji Mandi S/s (~37MW) affected. And due to tripping of 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1&2 load of 220kV Narela (~120MW) affected. ix) As reported, load of 220kV Narela S/s was restored at 20:24 hrs through 220kV DSIDC Bawana-Narela ckt-1&2 and load of 220kV Gopalpur & 220kV Sabji mandi was restored at 20:26 hrs through 220kV Wazirabad-Gopalpur ckt-1&2.	1) 220KV Bus 1 at Mandola(PG) 2) 220KV Bus 2 at Mandola(PG) 3) 220 KV Mandola(PG)-Gopalpur(DTL) (DTL) Ckt-1 4) 220 KV Mandola(PG)-Gopalpur(DTL) (DTL) Ckt-2 5) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 6) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-2 7) 400/220 kV 500 MVA ICT 2 at Mandola(PG) 8) 400/220 kV 500 MVA ICT 4 at Mandola(PG) 9) 125MVAr bus reactor-1 at 220kV side
10	GD-1	Rajasthan	24-Jul-2023 03:29	24-Jul-2023 09:48	6:19	0	205	0.000	0.305	49195	67222	i) 220/132kV Bhiwadi(RS) has double main bus scheme at 220kV side. ii) As reported, at 03:29hrs, 220/132kV 160MVA ICT-1 at Bhiwadi(RS) caught fire which created internal fault in the ICT and due to this LBB operated. Rajasthan has been asked to share the reason of LBB operation. iii) During this time, 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-1 & 2 and 220/132kV 160MVA ICT-2 & 3 at Bhiwadi(RS) tripped which resulted in complete blackout of 220/132kV Bhiwadi(RS) S/s. Rajasthan has been asked to share the reason of tripping of all the elements at Bhiwadi(RS). iv) As reported by SLDC Rajasthan, 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-1 tripped from 220KV Bhiwadi(RS) end only. Line was manually tripped from PGCIL end. 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-2 tripped from both ends. v) As per DR of Bhiwadi(PG) of 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-2, Y-N fault at distance of ~7.7km (Z-2) & fault current of 13.68kA is observed. vi) As per PMU at Bhiwadi(PG), two consecutive Y-N phase to earth faults with the delayed clearance of 360msec are observed. vii) As per SCADA, change in demand of approx. 205MW in Rajasthan control area is observed.	1) 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-1 2) 220 KV Bhiwadi(PG)-Bhiwadi(RS) (RS) Ckt-2 3) 220/132kV 160MVA ICT-1 at Bhiwadi(RS) 4) 220/132kV 160MVA ICT-2 at Bhiwadi(RS) 5) 220/132kV 100MVA ICT-3 at Bhiwadi(RS)
11	GI-2	Haryana	25-Jul-2023 14:44	25-Jul-2023 18:00	3:16	0	190	0.000	0.258	54660	73753	i) 220kV side of 400/220kV Bahadurgarh(PG) has double main & transfer bus scheme. ii) As reported, at 14:22 hrs, sparking was observed in Y-phase isolator of 400/220 kV 315 MVA ICT 2 at Bahadurgarh(PG) and ICT 2 tripped. POWERGRID has been communicated to share the exact detail of protection operation. iii) Further at 14:44 hrs, bus bar protection operated at 220KV Bus 1 & 2 at Bahadurgarh(PG) and 400/220 kV 315 MVA ICT 1 at Bahadurgarh(PG) along with 220 KV Bahadurgarh(PG)-Nuna Majra(HV) (HVPNL) Ckt-1 & 2 tripped. POWERGRID has been communicated to share the exact nature and location of fault. iv) As per DR of 220 KV Bahadurgarh(PG) Nuna Majra(HV) (HVPNL) Ckt-2 of POWERGRID end, line tripped on B-N phase to earth fault in Z-2. v) As per PMU at Bahadurgarh(PG), B-N phase to earth fault with delayed fault clearance time of 240 ms is observed. vi) As per SCADA, change in demand of approx. 190MW in Haryana control area.	1) 400/220 kV 500 MVA ICT 2 at Bahadurgarh(PG) 2) 220KV Bus 1 at Bahadurgarh(PG) 3) 220KV Bus 2 at Bahadurgarh(PG) 4) 220 KV Bahadurgarh(PG)-Nuna Majra(HV) (HVPNL) Ckt-1 5) 220 KV Bahadurgarh(PG)-Nuna Majra(HV) (HVPNL) Ckt-2 6) 400/220 kV 315 MVA ICT 1 at Bahadurgarh(PG)
12	GD-1	Rajasthan	26-Jul-2023 09:23	26-Jul-2023 11:58	2:35	450	0	0.866	0.000	51973	59547	i) Total MW generation of Avaada Sunce, Avaada RJHN and Avaada Sustainable are pooled at 400kV Avaada pooling and total generation is evacuated through 400 KV Avaada Pooling SL_BKN_PG (AEPL)-Bikaner(PG) (AEPL) Ckt. ii) As reported, at 09:23hrs, 400 KV Avaada Pooling SL_BKN_PG (AEPL)-Bikaner(PG) (AEPL) Ckt tripped on Z-4 distance protection operation at Bikaner end. iii) As per PMU at Avaada(IP), no fault is observed in the system. iv) As reported, relay co-ordination and PT/CVT wiring at both the ends were checked and revalidated. CVT wiring mis-contact was found at Avada line main-1 relay at Bikaner end and the same was rectified during shutdown 31st July 2023 night hours. v) As per PMU, generation loss of approx. 450MW at Avaada Pooling(IP) is observed.	1) 400 KV Avaada Pooling SL_BKN_PG (AEPL)-Bikaner(PG) (AEPL) Ckt

Details of Grid Events during the Month of July 2023 in Northern 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)		
13	GD-1	Uttar Pradesh	26-Jul-2023 04:46	26-Jul-2023 06:32	1:46	0	430	0.000	0.712	46861	60382	i) 400kV side of 400/220/132kV Gr.Noida(UP) has double main & transfer bus scheme. ii) During antecedent condition, power was flowing from 400kV side to 220kV side through 400/220 kV 315 MVA ICT 1 & 2 and 400/220 kV 500 MVA ICT 5 & 6 at Gr.Noida(UPC). iii) As reported, at 04:46 hrs, B-ph conductor of 400KV Bus 1 at Gr.Noida(UPC) broke and fell on Y-ph bay of 400 KV Dadri(NT)-Gr.Noida(UPC) (PG) Ckt-1 which created Y-B phase to phase fault at Bus 1. Due to this bus bar protection operated and elements on Bus 1 tripped. iv) It is further reported that due to delayed operation of bus coupler CB, elements on Bus 2 also tripped during the same time. Eventually 400/220/132kV Gr.Noida(UP) S/s became dead. v) As per DR, 400 KV Dadri(NT)-Gr.Noida(UPC) (DR end) (PG) Ckt-1 tripped on Y-B phase to phase fault with fault currents of 16.57kA and 15.56kA respectively in Y and B phase; fault sensed in zone-4. vi) As per PMU at Agra(PG), Y-B phase to phase fault with delayed fault clearance time of 440 ms is observed. vii) As per SCADA, change in demand of approx. 430MW in UP control area.	1) 400/220 kV 315 MVA ICT 1 at Gr.Noida(UPC) 2) 400/220 kV 315 MVA ICT 2 at Gr.Noida(UPC) 3) 400KV Bus 1 at Gr.Noida(UPC) 4) 400 KV Dadri(NT)-Gr.Noida(UPC) (PG) Ckt-1 5) 400 KV Gr.Noida(UPC)-Nawada(HV) (PG) Ckt-1 6) 400 KV Gr.Noida_2(UPC)-Gr.Noida(UPC) (UP) Ckt-1 7) 400/220 kV 500 MVA ICT 5 at Gr.Noida(UPC) 8) 400 KV Gr.Noida_2(UPC)-Gr.Noida(UPC) (UP) Ckt-2 9) 400/220 kV 500 MVA ICT 6 at Gr.Noida(UPC) 10) 400KV Bus 2 at Gr.Noida(UPC)
14	GI-1	Himachal Pradesh	26-Jul-2023 07:07	26-Jul-2023 09:11	2:04	0	125	0.000	0.229	47116	54598	i) 220/132kV Majri (HP) has double main bus scheme at both 220kV & 132kV level. During antecedent condition, active power flowing through 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 & 2 was 72MW each respectively. ii) As reported, at 07:07 hrs, 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 tripped on Y-B phase to phase fault. As per DR of Khodri end, Y-B phase to phase fault in Z-2 with fault current of 3.42kA each respectively in Y and B phase and fault clearance time of 384ms is observed. iii) During the same time, 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 also tripped due to over-current protection operation (Iy=~1.959kA and Ib=~1.785kA) from Majri end. Line tripped from Majri end only and remained charged from Khodri end. iv) As per PMU at Shahranpur(PG), Y-B phase to phase fault with delayed fault clearance time of 400ms is observed in the system. v) As per SCADA, change in demand of approx. 125MW is observed in HP control area.	1) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 2) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2
15	GD-1	Uttar Pradesh	26-Jul-2023 05:30	26-Jul-2023 06:40	1:10	0	105	0.000	0.179	47234	58819	i) 220kV side of 220/132kV Muzaffarnagar2(Nara)(UP) has main and transfer bus scheme. ii) As reported, at 05:30 hrs, 220kV Nara(UP)-Roorkee(UK) (UP) Ckt tripped from Roorkee end only on R-N fault. iii) This fault was sensed by Nara(UP) end in Z-1 with fault current of approx. 4.8 kA and fault distance of 31.9 km. However, relay at Nara(UP) failed to initiate tripping command. iv) Due to this, 220 KV Meerut(PG)-Nara(UP) (PG) Ckt (fault current 3.517kA as per DR), 220kV Nara(UP)-Jansath(UP) Ckt (fault distance 82.9km from Nara) and 220kV Nara(UP)-Muzaffarnagar(UP) Ckt (fault current 2.63kA from Nara) tripped from remote end. Fault was sensed in zone-3 (as per DR). v) During this time, 220/132kV 160MVA ICT-1 at Nara(UP) also tripped due to over-current earth fault protection operation. vi) With the tripping of all the aforementioned elements, feeding source to Nara(UP) S/s lost and 220/132kV Muzaffarnagar2(Nara)(UP) S/s became dead. vii) As per SCADA SOE, 220kV Muzaffarnagar(UP)-Jansath(UP) Ckt also tripped during the same time (reason yet to be shared). viii) As per PMU at Roorkee(PG), R-N phase to earth fault with delayed fault clearance time of 1400 ms is observed. ix) As reported by SLDC-UP, change in demand of approx. 105MW occured in UP control area.	1) 220kV Nara(UP)-Roorkee(UK) (UP) Ckt 2) 220 KV Meerut(PG)-Nara(UP) (PG) Ckt 3) 220kV Nara(UP)-Jansath(UP) Ckt 4) 220kV Nara(UP)-Muzaffarnagar(UP) Ckt 5) 220/132kV 160MVA ICT-1 at Nara(UP)
16	GI-1	Jammu and Kashmir	26-Jul-2023 14:19	26-Jul-2023 15:00	0:41	0	135	0.000	0.208	55367	64808	i) As reported, at 14:19 hrs, 220 KV Wagoora(PG)-Pampore(PDD) (PG) Ckt-1 tripped on R-N phase to earth fault with fault current of 1.18kA and fault distance of 57.4km from Wagoora(PG) end, fault was sensed in Zone-3 from Wagoora(PG). ii) At the same time, 220 KV Wagoora(PG)-Pampore(PDD) (PG) Ckt-2 also tripped from Pampore end only on over current protection operation. iii) As per PMU, R-Y phase to phase fault with delayed fault clearance time of 960ms is observed in system. iv) As per SCADA, load loss of approx. 135MW occurred in J&K control area.	1) 220 KV Wagoora(PG)-Pampore(PDD) (PG) Ckt-1 2) 220 KV Wagoora(PG)-Pampore(PDD) (PG) Ckt-2
17	GI-2	Delhi	29-Jul-2023 12:26	29-Jul-2023 12:50	0:24	0	70	0.000	0.116	52986	60558	i) 400/220kV Maharanibagh(DTL) has double main bus scheme at both 400kV and 220kV level. 220 kV Maharanibagh-Lodhi road (DTL) Ckt-1&2 were feeding the load of 220kV Lodhi Road S/s. ii) As reported, at 12:26 hrs, 220 kV Maharanibagh-Lodhi road (DTL) Ckt-2 tripped due to Y-ph LA burst at Maharanibagh end. Fault sensed in zone-1 at Maharanibagh end. iii) Further, 220 kV Maharanibagh-Lodhi (DTL) Ckt-1 also tripped during the same time (reason yet to be shared) (86B operated at Lodhi road end). iv) As per PMU at Ballabhgarh(PG), Y-N phase to earth fault is observed with fault clearing time of 80 ms. v) As per SCADA, load loss of approx. 200MW is observed in Delhi control area.	1) 220 kV Maharanibagh-Lodhi Road (DTL) Ckt-1 2) 220 kV Maharanibagh-Lodhi Road (DTL) Ckt-2
18	GD-1	Rajasthan	31-Jul-2023 10:36	31-Jul-2023 22:39	12:03	1620	0	2.639	0.000	61385	68548	i) On 31st July, 2023, at 10:36:11:200 hrs, B-ph jumper at RSUPL end of 220kV Fatehgarh2-RSUPL ckt snapped at tower location no. 10 at distance ~18km from RSUPL end. ii) On this fault, As per DR of both the ends, line successfully auto reclosed from both ends. However after approx. 750msec of A/R operation, line tripped from RSUPL end on under voltage protection. RSUPL has been communicated to disable the under voltage protection in line at the earliest. iii) At 10:36:11:280 hrs, R-N fault occurred on 220kV Fatehgarh2-RI3PL ckt. As per DR of both the ends, line successfully autoreclosed from both the ends. iv) As per PMU at Bikaner(PG), B-N phase to earth fault followed by R-N phase to earth fault which cleared within 80msec is observed. v) At the same time, drop in RE generation at RE stations connected at other ISTS pooling station in Rajasthan RE complex also occurred on LVRT (triggered due to B-N & R-N fault in the system). vi) During same time, 220kV Bhadla2(PG)-Nokhra ckt also tripped on SOTF over current protection at Nokhra end(as per DR). It was maloperation of protection due to incorrect SORF protection logic. Nokhra has been communicated to correct the logic of SOTF protection. vii) As per PMU, total loss in RE generation was approx. 1620MW. Out of total ~1620MW approx. 500MW lost due to tripping of RSUPL(260MW) & Nokhra(240MW) RE station as mentioned above and rest ~1120MW RE generation was due to partial/delayed recovery of RE generation after LVRT. Out of this 1120MW RE generation, ~400MW RE generation recovered within 01 min of the event.	1) 220 KV Renew SolarUrja SL_FGARH_PG (RSUPL)-Fatehgarh_II(PG) (Renew Solar Urja (RSUPL)) Ckt-1

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

Sl 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
	(GI 1or 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	WR	01-Jul-23 01:19	01-Jul-23 03:49	2:30	145.2	-	0.002	-	58756	48315	At 01:19 Hrs / 01-07-2023, 220 kV Bachau-Ostro 1 & 2 tripped due to blast of Yph LA of 33kV feeder 1. Generation loss of 145.2 MW occurred at 220 kV Ostro (Renew Power) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bachau-Ostro 1 & 2
2	GD-1	WR	04-Jul-23 20:09	05-Jul-23 12:33	16:24	20	-	0.000	-	69871	57616	At 20:09 Hrs / 04-07 -2023, 220 kV Bhuj-Kotda Madh tripped on B phase to earth fault. During patrolling, a rope was found hanging on B phase conductor which came in induction zone and line tripped. Generation loss of 20 MW occurred at 220 kV Kotda Madh (Alfanar) wind power plant due to the event.	Tripping of 1. 220 kV Bhuj-Kotda Madh
3	GD-1	WR	07-Jul-23 19:22	07-Jul-23 20:55	1:33	53	-	0.001	-	67942	55110	At 19:22 Hrs / 07-07-2023, 220 kV Bhuj-Vadva tripped on Y phase to earth fault at Vadva end only and A/R successfully at Bhuj end. Generation loss of 53 MW occurred at 220 kV Vadva (GIWEL) wind power plant due to the event.	Tripping of 1. 220 kV Bhuj- Vadva
4	GD-1	WR	09-Jul-23 20:54	09-Jul-23 22:10	1:16	-	197	-	0.004	66624	51197	At 20:54 Hrs/09-07-2023, 220 kV Magarwada Buses 1&2 tripped on Y-B phase fault on BB protection operation due to earth wire snapped and came in induction zone of 220 kV Magarwada Buses 1&2. Load loss of 197 MW occurred due to the event.	Tripping of 1. 220 kV Magarwada- Magarwada(PG) 1&2 2. 220 kV Magarwada- Vapi(PG) 1&2 3. 220 kV /66 kV Magarwada ICTs 1,2,3&4
5	GD-1	WR	12-Jul-23 05:03	13-Jul-23 16:22	11:19	31	-	0.000	-	63296	50634	At 05:03 Hrs/12-07-2023, 220 kV Jamkhambaliya- Sidhpur tripped on B-E fault. Generation loss of 31 MW occurred at 220 kV Sidhpur (Torrent) wind power plant due to loss of evacuation path. During patrolling, insiulator flashover was found at location 31/04 and after replacement of insulator also line did not hold. On more insulator flashover found at location 34/00. Line charged after replacement of the insulator.	Tripping of 1. 220 kV Jhamkhambaliya- Sidhpur
6	GD-1	WR	13-Jul-23 01:49	13-Jul-23 02:50	1:01	960	-	0.015	-	65842	52759	At 01:49 Hrs/13-07-2023, While test charging 400 kV MEL- Bilaspur 2 from MEL end, 400 kV Bilaspur-MEL 1 tripped on Over Voltage protection operation from Bilaspur end. Prior to the event, 400 kV MEL- Bilaspur 2 tripped on B-E fault at 00:05 Hrs/13-07-2023. Generation loss of 960 MW at 400 kV MEL due to loss of evacuation path.	Tripping of 1. 400 kV MEL- Bilaspur 1&2

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

Sl 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
	(GI 1or 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
7	GD-1	WR	14-Jul-23 20:07	15-Jul-23 01:25	5:18	47	-	0.001	-	72228	56810	At 20:07 Hrs / 14-07 -2023, 220 kV Bhuj-Kotda Madh tripped on B-E fault. During patrolling, foreign material was found hanging on B phase conductor. Generation loss of 47 MW occurred at 220 kV Kotda Madh (Alfanar) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj-Kotda Madh
8	GD-1	WR	15-Jul-23 16:47	15-Jul-23 22:05	5:18	205	-	0.003	-	68878	54677	At 16:47 Hrs / 15-07 -2023, 220 kV Bhuj- Dayapar 2 tripped on R-Y phase fault. Durring patrolling, R phase jumper open at Tower No. 154. Generation loss of 205 MW occurred at 220 kV Dayapar (INOX) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj- Dayapar 2
9	GD-1	WR	18-Jul-23 17:10	18-Jul-23 21:40	4:30	54	-	0.001	-	63848	55106	At 17:10 Hrs/18-07-2023, 220 kV Bhuj-Kotda Madh tripped on B-E fault. Generation loss of 54 MW occurred at 220 kV Kotda Madh (Alfanar) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj-Kotda Madh
10	GD-1	WR	20-Jul-23 02:04	20-Jul-23 02:55	0:51	720	-	0.012	-	61747	50037	At 02:04 Hrs / 20-07-2023, 400 kV Hadala-Vadinar-1 tripped on R-E fault. At the same time 400 kV Hadala-Vadinar-2 tripped on R-Y phase to phase fault on Zone-1 protection operation at Vadinar end only due to over-reach (As fault was on Line -1). Due to these trippings Vadinar (EPGL-Essar Power Gujarat Limited) units 1 & 2 (600 MW each) tripped due to loss of evacuation path, leading to blackout of Vadinar substation. Generation loss of 720 MW occurred at Vadinar (EPGL) power station.	Tripping of 1. 400 kV Hadala-Vadinar-1 & 2 2. Vadinar-Unit-1 & 2 (600 MW) 3. 400 kV Vadinar-Bus-1 & 2
11	GD-1	WR	20-Jul-23 20:15	20-Jul-23 20:55	0:40	615	-	0.009	-	71890	55647	At 20:15 Hrs / 20-07-2023, while charging of 400 kV Hadala-Vadinar-1, 400 kV Hadala-Vadinar-2 tripped on R-Y phase to phase fault, Zone-1 operation. Due to this tripping Vadinar (EPGL-Essar Power Gujarat Limited) units 1 & 2 (600 MW each) tripped due to loss of evacuation path, leading to blackout of Vadinar substation. Generation loss of 615 MW occurred at Vadinar (EPGL) power station.	Tripping of 1. 400 kV Hadala-Vadinar-2 2. Vadinar-Unit-1 & 2 (600 MW) 3. 400 kV Vadinar-Bus-1 & 2
12	GI-1	WR	22-Jul-23 15:43	22-Jul-23 20:04	4:21	3	-	0.000	-	61445	52186	At 15:43 Hrs / 22-07-2023, 220/33 kV Ramnagar Pahad ICT-1, 2 & 3 tripped from LV side on REF trip. At the time of these trippings heavy rains and lightning were reported by site. Generation loss of 3 MW occurred at 220 kV Ramnagar Pahad (Mahindra) solar plant due to the event.	Tripping of 1. 220/33 kV Ramnagar Pahad ICT-1, 2 & 3
13	GD-1	WR	26-Jul-23 19:38	26-Jul-23 20:50	1:12	70	-	0.001	-	69489	57913	At 19:38 Hrs./26-07-2023, 220 kV Jamkhambaliya- Khakarda line tripped from Khakarda end only on df/dt protection operation. As informed by AEPL, df/dt protection disabled at Khakarda end. Generation loss of 70 MW occurred at 220 kV Khakarda (AEPL) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Jamkhambaliya- Khakarda
14	GD-1	WR	27-Jul-23 19:05	27-Jul-23 20:24	1:19	180	-	0.003	-	67375	56097	At 19:05 Hrs/27-07-2023, While FTC of 220/33 kV Dayapar ICT 4 from 220 kV side, 220 kV Bhuj-Dayapar-2 tripped from Dayapar end only on under voltage protection operation. Generation loss of 180 MW occurred at 220 kV Dayapar(INOX) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj- Dayapar
15	GD-1	WR	28-Jul-23 09:44	28-Jul-23 11:18	1:34	250	-	0.004	-	64590	55795	At 09:44 Hrs/28-07-2023, 220 kV Bhuj- Naranpar tripped on B-E fault. Generation loss of 250 MW occurred at 220 kV Naranpar(GIWEL) wind power plant due to loss of evacuation path.	Tripping of 1. 220 kV Bhuj- Naranpar

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

Sl No.	Category of Grid Event	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)
	(GI 1or 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	Tamil Nadu	02-Jul-23 13:07	02-Jul-23 14:04	57mins	504	0	1.05%	0.00%	48020	49300	Complete Outage of 230kV NCTPS Stage-1 Generating Station of TANGEDCO: As per the reports submitted, the triggering incident was tripping of 230kV NCTPS ETPS line and 230kV NCTPS Kilapuk line on faults at 13:07hrs and 13:09hrs respectively. Tripping of these lines led to tripping of NCTPS Unit-1,2 & 3 on over-frequency protection. This led to a complete outage of the 230kV NCTPS Stage-1 Generating Station.	1. 230kV NCTPS Unit-1,2&3 2. 230kV NCTPS ETPS line 3. 230kV NCTPS Kilpauk line
2	GD-1	Karnataka	27-Jul-23 09:41	27-Jul-23 10:09	28mins	0	98	0.00%	0.24%	42616	41205	Complete Outage of 220kV/110kV Ambewadi SS of KPTCL: Duirng antecedent conditions, all 220kV elements were connected to 220kV Bus-1 at 220kV/110kV Ambewadi SS. As per the reports submitted, the triggering incident was B-N fault in 220kV Nagjheri Ambewadi line-2 and the line tripped. Because of this, 220kV Ambewadi Nagjheri line-1 got overloaded and caused the B-phase bus jumper connected to the line to fail. This resulted in a B-phase bus fault causing BBP to operate and all the elements connected to the 220kV Bus tripped. This led to a complete outage of 220kV/110kV Ambewadi SS.	1. 220kV/110kV Ambewadi Transformer-1,2&3 2. 220kV Nagjheri Ambewadi Line-1&2 3. 220kV Ambewadi Narendra Line-1&2 4. 220kV Ambewadi Ponda Line-1&2
3	GD-1	Telangana	27-Jul-23 16:10	27-Jul-23 21:27	5hrs 17mins	0	0	0.00%	0.00%	42297	40176	Complete Outage of 220kV/11kV BG Kothur LIS SS of TSTRANSCO: As per the reports submitted, the triggering incident was tripping of all 220kV connected lines at 220kV/11kV BG Kothur LIS SS on CTD operation due to DC supply failure. This resulted in complete outage of 220kV/11kV BG Kothur LIS SS.	1. 220kV BG Kothur Manuguru 2. 220kV BG Kothur Chintur 3. 220kV BG Kothur KTPS Stage-V 4. 220kV BG Kothur KTPS Stage-III
4	GI-2	Andhra Pradesh	03-Jul-23 17:37	03-Jul-23 18:33	54 mins	0	0	0.00%	0.00%	43575	45632	Tripping of 400kV Bus-1 of 400kV Hinduja Generating station: As per the reports submitted, the triggering incident was B-N fault in 400kV Guddigudem Hinduja line-1. At Hinduja end, the main breaker failed to open causing LBB to operate and all the main breakers connected to 400kV Bus-1 tripped.	1. 400kV Guddigudem Hinduja Line-1
5	GI-1	Telangana	06-Jul-23 00:34	06-Jul-23 01:27	53 mins	0	0	0.00%	0.00%	40442	39752	Tripping of 220kV Bus-2 of 220kV Upper Jurala PH of TSGENCO: During antecedent conditions, there was no generation at 220kV Upper Jurala PH. As per the reports submitted, the triggering incident was R-N fault in 220kV Jurala Raichur_KA Line-2. At the same time, the Bus Coupler tripped on over current protection. Tripping of only connected line and bus coupler resulted in de-energization of 220kV Bus-2 at 220kV Upper Jurala PH.	1. 220kV Jurala Raichur_KA Line-2 2. 220kV Bus coupler at 220kV Jurala PH
6	GI-2	Andhra Pradesh	11-Jul-23 19:54	11-Jul-23 23:00	3hrs 6mins	0	0	0.00%	0.00%	43527	44793	Tripping of 400kV Bus-3 and Bus-4 of 400kV/220kV Kalpakka SS of APTRANSCO: As per the reports submitted, the triggering incident was R-phase CT failure in Bus coupler-2 bay of 400kV/220kv Kalpakka SS. Immediately, 400kV Bus-3 and Bus-4 BBP operated and all the elements connected to the Bus-3 and Bus-4 tripped.	1. 400kV Kalpakka Gajuwaka Line-1&2 2. 400kV Kalpakka Simhari Line-2 3. 400kV kalpakka Vemagiri Line-1 4. 400kV/220kV Kalpakka ICT-3
7	GI-2	Tamil Nadu	27-Jul-23 07:12	27-Jul-23 09:46	2hr 34mins	0	0	0.00%	0.00%	37555	38621	Tripping of 400kV Bus-1 of 400kV/230kV/110kV Alamathy SS of TANTRANSCO: 400kV/230kV/110kV Alamathy SS is operating with one and half breaker scheme at 400kV level. As per the reports submitted, the triggering incident was bus-side B-phase CT failure in 400kV/230kV ICT-5 at 400kV/230kV/110kV Alamathy SS. Immediately, 400kV Bus-1 BBP operated and the main breakers connected to the 400kV Bus-1 tripped. This resulted in de-energisation of 400kV Bus-1 of 400kV/230kV/110kV Alamathy SS.	1. 400kV/230kV ICT-5 at Alamathy

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

Sl 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
	(GI 1 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	GI-2	Farakka (FSTPP)	01.07.2023 02:17	01.07.2023 05:28	03:11	1420	0	4.61%	0.00%	30802	22584	At 02:17 Hrs. FSTPP Unit-4 (500 MW) tripped on Low Vacuum and other remaining four units of FSTPP St I & II went off Bar on low vacuum within next 45 Mins one by one. Around 1420 MW generation loss occurred.Unit Tripping time as below: 500 MW U#4: 02:17 Hrs 200 MW U#2: 02:31 Hrs 200 MW U#3: 02:31 Hrs 200 MW U#1: 02:35 Hrs 500 MW U#5: 03:00 Hrs	3*200 MW Unit at FSTPP 2*500 MW Unit at FSTPP
2	GI-2	GMR (Odisha)	31.07.2023 16:29	01.08.2023 16:40	24:11	262	0	0.93%	0.00%	28268	26624	At 16:29 Hrs, 400 kV GMR-Meramundali B tripped due to B_N fault. Consequently, 350 MW U#3 of GMR tripped due to loss of evacuation path. 262 MW generation loss occurred.	350 MW U#3 at GMR (STU) 400 kV GMR-Meramundali B

Details of Grid Events during the Month of July 2023 in North Eastern 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: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	New Umtru Generating Station of Meghalaya Power System	03-Jul-23 14:46	03-Jul-23 14:53	0:07:00	20	0	0.69%	0.00%	2898	2447	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 14:46 Hrs on 03.07.2023, 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 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 14:53 Hrs on 03.07.2023.	132 kV EPIP II - New Umtru and 132 kV Umtru - New Umtru lines.
2	GD 1	Sarupathar and Bokajan areas of Assam Power System	04-Jul-23 10:00	04-Jul-23 10:20	0:20:00	0	24	0.00%	0.90%	2404	2661	Sarupathar and Bokajan areas of Assam Power System were connected with rest of NER grid through 132 kV Sarupathar -Golaghat line. 132 kV Bokajan - Dimapur(PG) line was under planned shutdown prior to event. At 10:00 Hrs on 04.07.2023, 132 kV Sarupathar - Golaghat line tripped. Due to tripping of this element, Sarupathar and Bokajan 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 Sarupathar and Bokajan areas of Assam Power System by charging 132 kV Sarupathar - Golaghat line at 10:20 Hrs on 04.07.2023.	132 kV Sarupathar - Golaghat line
3	GD 1	Sarupathar and Bokajan areas of Assam Power System	04-Jul-23 10:48	04-Jul-23 11:17	0:29:00	0	22	0.00%	0.84%	2340	2608	Sarupathar and Bokajan areas of Assam Power System were connected with rest of NER grid through 132 kV Sarupathar -Golaghat line. 132 kV Bokajan - Dimapur(PG) line was under planned shutdown prior to event. At 10:48 Hrs on 04.07.2023, 132 kV Sarupathar - Golaghat line tripped. Due to tripping of this element, Sarupathar and Bokajan 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 Sarupathar and Bokajan areas of Assam Power System by charging 132 kV Dimapur (PG) - Bokajan line at 11:17 Hrs on 04.07.2023.	132 kV Sarupathar - Golaghat line
4	GD 1	Margherita(Ledo), Rupai, Chapakhowa areas of AssamPower System and Roing, Tezu, Namsai, Pasighat, Along, Daporijo and Ziro areas of Arunachal Pradesh Power System	04-Jul-23 18:32	04-Jul-23 20:47	2:15:00	0	72	0.00%	2.41%	2781	2987	Margherita(Ledo), Rupai, Chapakhowa areas of Assam Power System and Roing, Tezu, Namsai, Pasighat, Along, Daporijo and Ziro areas of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Tinsukia - Margherita(Ledo) line. 132kV Ranganadi - Ziro and 132 kV Tinsukia - Rupai lines were under outage prior to event. At 18:32 Hrs on 04.07.2023, 132 kV Tinsukia - Margherita(Ledo) line tripped. Due to tripping of this element, Margherita(Ledo), Rupai, Chapakhowa areas of Assam Power System and Roing, Tezu, Namsai, Pasighat, Along, Daporijo and Ziro areas 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 Roing, Tezu, Namsai, Pasighat, Along, Daporijo and Ziro by charging 132 kV Ziro - Ranganadi line at 20:47 Hrs on 04.07.2023. Power supply was extended to Margherita(Ledo), Rupai, Chapakhowa areas of Assam Power System a 132 kV Tinsukia - Margherita(Ledo) line at 23:16 Hrs on 04.07.2023.	132 kV Tinsukia - Margherita(Ledo) line
5	GD 1	Tuirial Generating Station of Mizoram Power System	05-Jul-23 18:05	05-Jul-23 18:17	0:12:00	18	0	0.68%	0.00%	2639	3043	Tuirial Generating Station of Mizoram Power System was connected with the rest of NER Grid through 132 kV Tuirial-Kolasib line. At 18:05 Hrs on 05.07.2023, 132 kV Tuirial-Kolasib line tripped. Due to tripping of this element, Tuirial Generating Station of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Tuirial Generating Station of Mizoram Power System by charging 132 kV Tuirial-Kolasib line at 18:17 Hrs on 05.07.2023	132 kV Tuirial-Kolasib line
6	GD 1	Tuirial Generating Station of Mizoram Power System	06-Jul-23 16:10	06-Jul-23 16:20	0:10	18	0	1%	0%	2203	2794	Tuirial Generating Station of Mizoram Power System was connected with the rest of NER Grid through 132 kV Tuirial-Kolasib line. At 16:10 Hrs on 06.07.2023, 132 kV Tuirial-Kolasib line tripped. Due to tripping of this element,Tuirial Generating Station of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Tuirial Generating Station of Mizoram Power System by charging 132 kV Tuirial-Kolasib line at 16:20 Hrs on 06.07.2023	132 kV Tuirial-Kolasib line

Details of Grid Events during the Month of July 2023 in North Eastern 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: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)		
7	GD 1	Pasighat, Roing, Tezu & Namsai areas of Arunchal Pradesh Power System and Chapakhowa area of Assam Power System	14-Jul-23 13:20	14-Jul-23 13:29	0:09	0	19	0%	1%	2613	2607	Pasighat, Roing, Tezu & Namsai areas of Arunchal Pradesh Power System and Chapakhowa area of Assam Power System were connected with rest of NER grid through 132 kV Along-Pasighat and 132 kV Rupai-Chapakhowa lines. At 13:20 Hrs on 14.07.2023, 132 kV Along-Pasighat and 132 kV Rupai-Chapakhowa lines tripped. Due to tripping of these elements, Pasighat, Roing, Tezu & Namsai areas of Arunchal Pradesh Power System and Chapakhowa area of Assam 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 Pasighat, Roing, Tezu & Namsai areas of Arunchal Pradesh Power System and Chapakhowa area of Assam Power System by charging 132 kV Rupai-Chapakhowa Line at 13:29 Hrs on 14.07.2023.	132 kV Along-Pasighat and 132 kV Rupai-Chapakhowa lines
8	GD 1	Karbi Langpi Generating Station of Assam Power System	15-Jul-23 10:33	15-Jul-23 10:47	0:14:00	50	0	1.74%	0.00%	2875	2764	Karbi Langpi Generating Station of Assam Power System was connected with the rest of NER Grid through 220 kV Sarusajai-Karbi Langpi 1 line. 220 kV Sarusajai-Karbi Langpi 2 line was under planned shutdown since 08:52 Hrs on 15.07.2023 for maintenance of Isolator. At 10:46 Hrs on 15.07.2023, 220 kV Sarusajai-Karbi Langpi 1 line tripped. Due to tripping of this element, Karbi Langpi Generating Station of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Karbi Langpi Generating Station of Assam Power System by charging 220 kV Sarusajai-Karbi Langpi 1 line at 10:47 Hrs on 15.07.2023	220 kV Sarusajai-Karbi Langpi 1 line
9	GD 1	Meluri & Kiphire areas of Nagaland Power System	18-Jul-23 17:13	18-Jul-23 17:54	0:41:00	16	9	0.47%	0.32%	3381	2808	Meluri & Kiphire areas of Nagaland Power System were connected with rest of grid through 132 kV Kohima-Meluri line. At 17:13 Hrs on 18.07.2023, 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. 132 kV Kohima-Meluri line was declared faulty at 17:54 Hrs on 18.07.2023. Power supply was extended to Meluri & Kiphire areas of Nagaland Power System by charging 132 kV Kohima-Meluri line at 11:40 Hrs on 19.07.2023.	132 kV Kohima-Meluri line
10	GD 1	Karbi Langpi Generating Station of Assam Power System	18-Jul-23 10:46	18-Jul-23 11:17	0:31:00	50	0	1.75%	0.00%	2850	2478	Karbi Langpi Generating Station of Assam Power System was connected with the rest of NER Grid through 220 kV Sarusajai-Karbi Langpi 1 line. 220 kV Sarusajai-Karbi Langpi 2 line was under state approved shutdown from 06:58 Hrs on 18.07.2023. At 10:46 Hrs on 18.07.2023, 220 kV Sarusajai-Karbi Langpi 1 line tripped. Due to tripping of this element, Karbi Langpi Generating Station of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Karbi Langpi Generating Station of Assam Power System by charging 220 kV Sarusajai-Karbi Langpi 1 line at 11:17 Hrs on 18.07.2023	220 kV Sarusajai-Karbi Langpi 1 line
11	GD 1	Nirjuli area of Arunachal Pradesh Power System	20-Jul-23 14:03	20-Jul-23 14:57	0:54:00	0	23	0.00%	0.75%	2867	3055	Nirjuli area of Arunachal Pradesh Power System was connected with rest of NER Grid through 132 kV Lekhi - Nirjuli line. 132 kV Gohpur - Nirjuli line was under shutdown to avoid over loading of 132 kV Itanagar - Lekhi line At 14:03 Hrs on 20.07.2023, 132 kV Lekhi - Nirjuli line tripped. Due to tripping of this element, Nirjuli area of Arunachal Pradesh 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 Nirjuli area of Arunachal Pradesh Power System by charging 132 kV Lekhi - Nirjuli line at 14:57 Hrs on 20.07.2023.	132kV Lekhi - Nirjuli line
12	GD 1	Karong area of Manipur Power System	22-Jul-23 09:31	22-Jul-23 10:03	0:32	0	12	0%	0%	2798	2627	Karong area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal (MSPCL) - Karong & 132 kV Karong - Kohima lines. At 09:31 Hrs on 22.07.2023, 132 kV Imphal (MSPCL) - Karong & 132 kV Karong - Kohima lines tripped. Due to tripping of these elements, Karong area of Manipur 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 Karong area of Manipur Power System by charging 132 kV Imphal (MSPCL) - Karong line at 10:03 Hrs on 22.07.2023	132 kV Imphal (MSPCL) - Karong & 132 kV Karong - Kohima lines

Details of Grid Events during the Month of July 2023 in North Eastern 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: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)		
13	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	22-Jul-23 19:07	22-Jul-23 19:46	0:39	27	36	1%	1%	3273	3182	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 19:07 Hrs on 22.07.2023, 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 19:46 Hrs on 22.07.2023. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara- Tenga line at 13:51 Hrs on 23.07.2023.	132 kV Balipara- Tenga line
14	GD 1	Lunshnong area of Meghalaya Power System	23-Jul-23 10:40	23-Jul-23 12:10	1:30	0	30	0%	1%	2799	2227	Lunshnong area of Meghalaya Power System was connected with rest of NER grid through 132 kV Khleihriat-Lumshnong line. 132 kV Lumshnong-Panchgram line tripped at 08:36 Hrs on 23.07.2023 and was declared faulty. At 10:40 Hrs on 23.07.2023, 132 kV Khleihriat-Lumshnong line tripped. Due to tripping of this element, Lumshnong area of Meghalaya Power System got separated from rest of the NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Lunshnong area of Meghalaya Power System by charging 132 kV Khleihriat-Lumshnong line at 12:10 Hrs on 23.07.2023.	132 kV Khleihriat-Lumshnong line
15	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	23-Jul-23 18:04	23-Jul-23 18:35	0:31	17	22	1%	1%	3178	2618	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 18:04 Hrs on 23.07.2023, 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. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara- Tenga line at 18:35 Hrs on 23.07.2023.	132 kV Balipara- Tenga line
16	GD 1	Umtru and New Umtru Power Stations of Meghalaya Power System	23-Jul-23 20:38	23-Jul-23 20:46	0:08	36	0	1%	0%	3586	3142	Umtru and New Umtru Power Stations of Meghalaya Power System were connected with rest of NER grid through 132 kV Killing - EPIP II D/C, 132 kV EPIP II - Umtru D/C, 132 kV EPIP II - New Umtru, 132 kV Umtru - Umiam IV D/C, 132 kV Umtru - Umiam III D/C, 132 kV Umtru - New Umtru lines. 132 kV Umtru - Sarusajai D/C lines and 132 kV Umtru - Kahilipara D/C lines were idle charged to avoid overloading of 132 kV EPIP-II - Umtru D/C lines. At 20:38 Hrs on 23.07.2023, 132 kV Killing - EPIP II D/C, 132 kV EPIP II - Umtru D/C, 132 kV EPIP II - New Umtru, 132 kV Umtru - Umiam IV D/C, 132 kV Umtru - Umiam III D/C, 132 kV Umtru - New Umtru lines tripped. Due to tripping of the elements, Umtru and New Umtru Power Stations of Meghalaya Power System got separated from rest of the NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Umtru and New Umtru Power Stations of Meghalaya Power System by charging 132 kV Umtru - New Umtru line at 20:46 Hrs on 23.07.2023.	132 kV Killing - EPIP II D/C, 132 kV EPIP II - Umtru D/C, 132 kV EPIP II - New Umtru, 132 kV Umtru - Umiam IV D/C, 132 kV Umtru - Umiam III D/C, 132 kV Umtru - New Umtru lines
17	GD 1	Dhaligaon,Barpeta, Kokrajhar, Gosaigaon, Bilasipara, Gauripur and Bornagar areas of Assam Power System	25-Jul-23 11:45	25-Jul-23 11:47	0:02	0	130	0%	5%	2785	2760	Dhaligaon, Barpeta, Kokrajhar, Gosaigaon, Bilasipara, Gauripur and Bornagar areas of Assam Power System were connected with rest of NER grid through 160 MVA 220/132 kV ICT-I & 100 MVA 220/132 kV ICT-II at BTPS. 132 kV BTPS(AS) - Dhaligaon 1 line tripped at 06:30 Hrs on 25.07.2023 and was under ESD due to isolator issue at BTPS. 132 kV Nalbari-Barpeta line was under shutdown to avoid overloading of 132 kV Rangia-Nalbari line and 132 kV Gossaigaon-Gauripur line was under shutdown to avoid overloading of 132 kV BTPS-Kokrajhar D/C lines. At 11:45 Hrs on 25.07.2023, 160 MVA 220/132 kV ICT-I & 100 MVA 220/132 kV ICT-II at BTPS tripped. Due to tripping of these elements, Dhaligaon, Barpeta, Kokrajhar, Gosaigaon, Bilasipara, Gauripur and Bornagar areas of Assam Power System got separated from rest of the NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Dhaligaon, Barpeta, Kokrajhar, Gosaigaon, Bilasipara, Gauripur and Bornagar areas of Assam Power System by charging 100 MVA 220/132kV ICT-II at BTPS at 11:47 Hrs on 25.07.2023.	160 MVA 220/132 kV ICT-I & 100 MVA 220/132 kV ICT-II at BTPS.

Details of Grid Events during the Month of July 2023 in North Eastern 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: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)		
18	GD 1	Zuangtui, Saitual areas and Vankal Solar Power Station of Mizoram Power System	25-Jul-23 13:13	25-Jul-23 13:42	0:29	18	20	1%	1%	2735	2797	Zuangtui, Saitual areas and Vankal Solar Power Station of Mizoram Power System were connected with rest of NER grid through 132 kV Melriat(PG) - Zuangtui line. 132 kV Serchip-Zuangtui line tripped at 13:08 Hrs on 25.07.2023. At 13:13 Hrs on 25.07.2023, 132 kV Melriat(PG) - Zuangtui line tripped. Due to tripping of this element, Zuangtui, Saitual areas and Vankal Solar Power Station of Mizoram Power System got separated from rest of the NER Grid and subsequently collapsed due to load generation mismatch in these areas. Power supply was extended to Zuangtui, Saitual areas and Vankal Solar Power Station of Mizoram Power System by charging 132 kV Melriat-Zuangtui line at 13:42 Hrs on 25.07.2023.	132 kV Melriat(PG) - Zuangtui line
19	GD 1	Pare HEP of Arunachal Pradesh Power System	25-Jul-23 14:11	25-Jul-23 14:34	0:23	120	0	4%	0%	2749	2715	Pare HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV Pare - Itanagar D/C lines. 132 kV Ranganadi -Pare-1 and 132kV Pare - Lekhi lines were under shutdown for straightening of 132 kV Ranganadi-Lekhi/Nirjuli line and commissioning of 132 kV Pare-North Lakhimpur transmission line and LILO at Nirjuli. At 14:11 Hrs on 25.07.2023, 132 kV Pare - Itanagar D/C lines tripped. Due to tripping of these elements, Pare HEP of Arunachal Pradesh Power System got separated from rest of the NER Grid and subsequently collapsed due to loss of evacuation path. 132 kV Pare - Itanagar D/C lines were declared faulty at 14:34 Hrs on 25.07.2023. Power supply was extended to Pare HEP of Arunachal Pradesh Power System by charging 132 kV Pare - Itanagar 2 line at 18:41 Hrs on 25.07.2023.	132 kV Pare - Itanagar D/C lines
20	GD 1	Itanagar area and Pare HEP of Arunachal Pradesh Power System	27-Jul-23 22:15	27-Jul-23 22:48	0:33	119	18	4%	1%	3400	3241	Itanagar area and Pare HEP of Arunachal Pradesh Power System were connected with rest of NER grid through 132 kV BNC-Itanagar D/C and 132 kV Lekhi-Itanagar lines. At 22:15 Hrs on 27.07.2023, 132 kV BNC-Itanagar D/C and 132 kV Lekhi-Itanagar lines tripped. Due to tripping of these elements, Itanagar area and Pare HEP of Arunachal Pradesh Power System got separated from rest of the NER Grid and subsequently collapsed due to load generation mismatch in these areas. Power supply was extended to Itanagar area and Pare HEP of Arunachal Pradesh Power System by charging 132 kV Lekhi-Itanagar line at 22:48 Hrs on 27.07.2023.	132 kV BNC-Itanagar D/C and 132 kV Lekhi-Itanagar lines
21	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	28-Jul-23 09:04	28-Jul-23 09:44	0:40	11	21	0%	1%	2918	2544	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 09:04 Hrs on 28.07.2023, 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 09:44 Hrs on 28.07.2023. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara- Tenga line at 15:31 Hrs on 28.07.2023.	132 kV Balipara- Tenga line
22	GD 1	Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System	29-Jul-23 01:14	29-Jul-23 01:43	0:29	5	18	0%	1%	2955	2826	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 01:14 Hrs on 29.07.2023, 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. Power supply was extended to Tenga, Khupi areas and Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara- Tenga line at 01:43 Hrs on 29.07.2023.	132 kV Balipara- Tenga line
23	GD 1	Dharmanagar area of Tripura Power System	29-Jul-23 11:05	29-Jul-23 11:25	0:20	0	18	0%	1%	2971	2465	Dharmanagar area of Tripura Power System was connected with the rest of NER Grid through 132 kV Dharmanagar - Dullavchera line. 132 kV Dharmanagar - PK Bari Line was declared faulty since 10:43 Hrs of 29.07.2023. At 11:05 Hrs on 29.07.2023, 132 kV Dharmanagar - Dullavchera line tripped. Due to tripping of this element, Dharmanagar area of Tripura Power System was separated from the rest of NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Dharmanagar area of Tripura Power System by charging 132 kV Dharmanagar - Dullavchera line at 11:25 Hrs on 29.07.2023.	132 kV Dharmanagar - Dullavchera line

Details of Grid Events during the Month of July 2023 in North Eastern 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: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)		
24	GD 1	Kohima, Meluri and Kiphire areas of Nagaland Power System	29-Jul-23 13:26	29-Jul-23 14:48	1:22	23	13	1%	0%	3067	2828	Kohima, Meluri and Kiphire areas of Nagaland Power System were connected with rest of NER grid through 132 kV Dimapur-Kohima, 132 kV Kohima-Chiephobozou, 132 kV Kohima-Karong &132 kV Meluri-Kiphire lines. At 13:26 Hrs on 29.07.2023, 132 kV Dimapur-Kohima, 132 kV Kohima-Chiephobozou, 132 kV Kohima-Karong & 132 kV Meluri-Kiphire lines tripped. Due to tripping of these elements, Kohima, Meluri and Kiphire areas of Nagaland Power System got separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas. Power supply was extended to Kohima, Meluri and Kiphire areas of Nagaland Power System by charging 132 kV Dimapur-Kohima line at 14:48 Hrs on 29.07.2023.	132 kV Dimapur-Kohima, 132 kV Kohima-Chiephobozou, 132 kV Kohima-Karong &132 kV Meluri-Kiphire lines
25	GD 1	Bokajan area of Assam Power System	30-Jul-23 21:24	30-Jul-23 23:18	1:54	0	10	0%	0%	3466	3223	Bokajan area of Assam Power System was connected with rest of NER grid through 132 kV Bokajan - Sarupathar line. 132 kV Bokajan - Dimapur(PG) line was under outage from 21:23 Hrs on 30.07.2023 At 21:24 Hrs on 30.07.2023, 132 kV Bokajan - Sarupathar line tripped. Due to tripping of this element, Bokajan area of Assam Power System got separated from rest of the NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Bokajan area of Assam Power System by charging 132 kV Bokajan - Sarupathar line at 23:18 Hrs on 30.07.2023.	132 kV Bokajan - Sarupathar line
26	GD 1	Tuirial Generating Station of Mizoram Power System	30-Jul-23 17:41	30-Jul-23 17:58	0:17	22	0	1%	0%	3027	2884	Tuirial Generating Station of Mizoram Power System was connected with the rest of NER Grid through 132 kV Tuirial-Kolasib line. At 17:14 Hrs on 30.07.2023, 132 kV Tuirial-Kolasib line tripped. Due to tripping of this element, Tuirial Generating Station of Mizoram Power System got separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path. Power supply was extended to Tuirial Generating Station of Mizoram Power System by charging 132 kV Tuirial-Kolasib line at 17:58 Hrs on 30.07.2023	132 kV Tuirial-Kolasib line
27	GI-II	Assam	18-Jul-23 10:31	18-Jul-23 12:00	1:29	20	0	1%	0%	2855	2635	AGBPP Unit 7 tripped at 10:31 Hrs on 18.07.2023 due to Leakage of high capacity NRV. Revision done from Block No. 49 on 18.07.2023.	AGBPP Unit 7
28	GI-I	Tripura	24-Jul-23 06:02	24-Jul-23 08:00	1:58	10	0	0%	0%	2797	2362	AGTCCPP Unit 6 tripped at 06:02 Hrs on 24.07.2023 due to Turbine bearing temperature high. Revision done from Block No. 33 on 24.07.2023.	AGTCCPP Unit 6
29	GI-II	Tripura	28-Jul-23 12:57	28-Jul-23 14:30	1:33	526	0	19%	0%	2803	2591	Palatana Module 1 and Module 2 tripped at 12:57 Hrs and 12:59 Hrs respectively on 28.07.2023 due to loss of Flame in GTG-1 and generator protection operated in GTG-2. Revision done from Block No. 59 on 28.07.2023.	Palatana Module 1 and Module 2
30	GI-I	Tripura	30-Jul-23 19:29	30-Jul-23 20:45	1:16	18	0	1%	0%	3414	3165	AGTCCPP Unit 5 tripped at 19:29 Hrs on 30.07.2023 due to Exhaust Steam Pressure High Trip. Revision done from Block No. 84 on 30.07.2023.	AGTCCPP Unit 5