Details of Grid Events during the Month of July 2024 in Northern 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 GI 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	Uttar Pradesh	01-07-2024 21:37	01-07-2024 23:44	02:07	0	80	0.000	0.102	55304	78768	i) 220kV Baghpat(UP) has main and transfer bus scheme at 220kV level. ii) During antecedent condition, incoming power at Baghpat(UP) was approx. 80 MW through 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C, 220/132kV 160MVA ICT-1 and 220/132kV 100MVA ICT-2 were connected to 220kV main bus. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C is on the same towers. iii) As per SCADA SOE, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped at 21:37:59.415hrs and 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 tripped at 21:37:59.535 hrs. iv) As reported, at 21:37 hrs, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped on Y-B-N double phase to earth fault and line tripped on zone-1 distance protection operation from both ends. As per Baghpat(UP) reporting, initially a B-ph fault occurred on 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 with fault current - 10.39kA in zone-1. At the same time, jumper at tower no 45 of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 got broken which created line-line (Y-B) fault due to which line got tripped from both ends. v) Further 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 also tripped on B-N phase to earth fault with fault current of ~9.7kA and fault distance of 11.8km from Baghpat(PG) end. As per DR of Baghpat(PG) end, B-N phase to earth fault with no A/R operation is observed and line tripped on zone-1 distance protection operation. Since there was no source remaining at 220kV Baghpat(UP) hence 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 didn't trip from Baghpat(UP) end. vi) As per PMU at Meerut(PG), Y-B phase to phase fault with fault clearance time of 80ms is observed. vii) Due to tripping of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2, Baghpat(UP) lost its connectivity from the grid and 220kV Baghpat(UP) S/s became dead. viii) As per SCADA, change in demand of approx. 68 MW in UP control area. However, SLDC-UP reported 80MW load loss.	1) 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 2) 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2
2	GD-1	Uttar Pradesh	01-07-2024 00:15	01-07-2024 00:28	00:13	0	195	0.000	0.267	53003	72935	i) 220kV Chinhat(UP) has main and transfer bus scheme at 220kV level. ii) During antecedent condition, incoming power at Chinhat(UP) was through 220kV Satrikh ckt (~100MW), Kursi Road ckt (~30MW) and Lucknow(PG) ckt (~80MW) and outgoing power was through 220kV Gomatinagar ckt (~30MW) and load at Chinhat(UP) S/s (~90MW). All 220kV lines and ICTs connected to 220kV main bus at Chinhat(UP) S/s. 220kV Chinhat-LMRC D/C is radial line from Chinhat(UP) S/s. iii) As reported, at 00:15 hrs, LA of 220 KV Chinhat-Satrikh Road (UP) Ckt bay burst at Chinhat(UP) S/s which caused R-N phase to earth fault. iv) On this fault 220kV lines from Chinhat(UP) to Satrikh Road (UP), Gomtinagar (UP), Kursi Road (UP) & Lucknow_1(PG) tripped (Reason of tripping and type of protection operated for all elements yet to receive). v) Due to these trippings at Chinhat(UP) S/s, 220kV Chinhat-LMRC D/C, 220/132kV ICT-1 & 2 became dead and blackout occurred at 220kV Chinhat(UP) S/s. vi) As per PMU at Lucknow(PG), R-N phase to earth fault with delayed fault clearance of 440msec is observed (reason for delayed fault clearance yet to receive). vii) As per SCADA, change in demand of approx. 195 MW in UP control area.	1) 220 KV Chinhat-Satrikh Road (UP) Ckt 2) 220 KV Chinhat-Gomtinagar (UP) Ckt 3) 220 KV Chinhat-Kursi Road (UP) Ckt 4) 220 KV Chinhat(UP)-Lucknow_1(PG) (UP) Ckt
3	GD-1	Delhi	04-07-2024 14:21	04-07-2024 15:00	00:39	0	106	0.000	0.160	59455	66088	i) 220kV Vasant Kunj(DTL) has double main Bus arrangement at 220kV side. ii) During antecedent condition, 220 KV Vasant Kunj-RK Puram(DTL) Ckt-1, 220 KV Vasant Kunj-Mehrauli(DTL) Ckt-1, 220/66kV 100MVA ICT-1 & 2 were connected to 220kV Bus-1 and 220 KV Vasant Kunj-RK Puram(DTL) Ckt-2 & 220/66kV 160MVA ICT-3 connected to 220kV Bus-2 at Vasant Kunj(DTL) S/s. 220 KV Vasant Kunj-Mehrauli(DTL) Ckt-1 & 2 were not in service (ckt-2 opened from Mehrauli end). iii) As reported, at 14:21 hrs, R-phase jumper of 220kV bus coupler connected to 220kV bus-2 got damaged which cause bus fault on both 220kV buses which led to bus bar protection operation on both 220kV buses at Vasant Kunj(DTL) S/s. iv) As per PMU at Dadri Thermal(NTPC), R-B phase to phase fault with fault clearing time of 80ms is observed. v) Due to bus bar protection operation at Vasant Kunj(DTL), all elements connected to 220kV bus-1 & 2 got tripped and blackout of 220kV Vasant Kunj(DTL) S/s occurred. vi) As per SCADA, change in demand of approx. 153 MW in Delhi control area (as per SCADA). However, 106 MW load loss is reported by SLDC-Delhi.	1) 220 KV Vasant Kunj-RK Puram(DTL) Ckt-1 2) 220 KV Vasant Kunj-RK Puram(DTL) Ckt-2 3) 220 KV Vasant Kunj-Mehrauli(DTL) Ckt-1 4) 220/66kV 100MVA ICT-1 at Vasant Kunj(DTL) 5) 220/66kV 100MVA ICT-2 at Vasant Kunj(DTL) 6) 220/66kV 160MVA ICT-3 at Vasant Kunj(DTL)
4	GI-1	Rajasthan	06-07-2024 05:26	06-07-2024 06:30	01:04	650	0	1.362	0.000	47708	54877	i) 400/220kV Akal(RS) has one and half breaker scheme at 400kV level and double main and transfer bus scheme at 220kV level. ii) During antecedent condition, incoming power at Akal(RS) S/s through 220 KV Akal-Akal(Suzlon) (RS) D/C and 220 KV Akal-Mulana (RS) Ckt were approx. 235 MW and 125 MW respectively. iii) As reported, at 05:26 hrs, R-phase conductor of 220 KV Akal-Akal(Suzlon) (RS) ckt-2 broke at a distance of approx. 160m from Akal(RS) S/s which caused R-N phase to earth fault and subsequently 220 KV Akal-Akal(Suzlon) (RS) ckt-2 tripped on zone-1 distance protection from Akal(RS) end. iv) As per PMU at ASPS1(IP), R-Y phase to phase fault followed by R-N phase to earth fault with fault clearance time of 80msec and 80msec respectively are observed. v) At the same time, 220 KV Akal-Akal(Suzlon) (RS) Ckt-1 and 220 KV Akal-Mulana (RS) Ckt also tripped from Akal(RS) end (Reason of tripping yet to be received). vi) During this event, dip in Rajasthan wind generation of approx. 1800 MW is observed out of which approx. 1150 MW recovered within 10 minutes. (As per SCADA). vii) As per SCADA, no change in demand is observed in Rajasthan control area. viii) As per SCADA, change in Rajasthan wind generation of approx. 168MW is observed.	1) 220 KV Akal-Akal(Suzlon) (RS) Ckt-2 2) 220 KV Akal-Akal(Suzlon) (RS) Ckt-1 3) 220 KV Akal-Mulana (RS) Ckt
5	GI-2	Uttar Pradesh	07-07-2024 11:44	07-07-2024 14:01	02:17	0	60	0.000	0.097	52587	61926	i) 220kV Mau(UP) has double main and transfer bus scheme at 400kV level. ii) During antecedent condition, 400 KV Azamgarh-Mau (UP) Ckt, 400 KV Mau(UP)-Balia(PG) (PG) Ckt & 400/132 kV 200 MVA ICT-3 connected to 400kV bus-1 and 400kV Mau-Rasra (UP) ckt, 400/132/33kV 200MVA ICT-1 & 2 connected to 400kV bus-2. 400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt was not in service during the event. iii) As reported, at 11:44 hrs, B-phase CT of 400 KV Azamgarh-Mau (UP) Ckt burst which caused bus fault on 400kV bus-1 which led to bus bar protection operation on 400kV bus-1 at Mau(UP) S/s (Reason for delayed operation of bus bar protection yet to be received). iv) As per PMU at Azamgarh(UP), B-N phase to earth fault converted into Y-B phase to phase fault with delayed fault clearance time of 560ms is observed (Reason for delayed fault clearance is yet to receive). v) Due to bus bar protection operation, all elements connected to 400kV bus-1 (400kV Azamgarh(UP) ckt, Balia(PG) ckt and 400/132 kV 200 MVA ICT-3) tripped at 400kV Mau(UP) S/s. vi) As per SCADA, change in demand of approx. 60 MW in UP control area.	1) 400 KV Azamgarh-Mau (UP) Ckt 2) 400 KV Mau(UP)-Balia(PG) (PG) Ckt 3) 400/132 kV 200 MVA ICT 3 at Mau(UP)

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
6	GI-2	Uttar Pradesh	10-07-2024 15:54	10-07-2024 17:53	01:59	0	100	0.000	0.137	60415	72949	i)400/220kV Sahupuri(UP) has double main double scheme at 400kV and 220kV level. ii)During antecedent condition at 15:52 hrs, 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-2, 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1 and 400/220 kV 500 MVA ICT-2 were connected to 400kV bus-1 and 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 and 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-2 were connected to 400kV bus-2 at 400kV Sahupuri(UP) S/s. 400/220 kV 500 MVA ICT-1 at Sahupuri(UP) is under installation (commissioning) process. iii)As reported, at 15:54 hrs, Y-N phase to earth fault occurred in GIS compartment at 400kV Sahupuri(UP) (exact location of fault is yet to be received). It is suspected that fault location was in the bay of 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-2 in GIS compartment at 400kV Sahupuri(UP). iv)On this fault, 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1 & 2 (fault current Iy=~1.1kA from Sahupuri end) tripped only from Sahupuri(UP) end on zone-4 distance protection. 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 & 2 (fault current Iy=~3.3kA from Varanasi end, Iy=~3.6kA from Sahupuri end) tripped only from Varanasi(PG) end on zone-2 distance protection and fault sensed in zone-4 from Sahupuri(UP) end. 400/220 kV 500 MVA ICT 2 at Sahupuri(UP) and also tripped (details of protection operation is yet to receive). v)As reported, from 15:27 hrs to 17:49 hrs, multiple 220 & 132kV line also tripped at 220kV Sahupuri S/s i.e. 220kV Sahupuri-Churk ckt, 220kV Sahupuri-Raja Talab ckt, 220kV Sahupuri(400kV)-Sahupuri(200kV) interconnector, 132kV Sahupuri-Aliapur ckt, 132kV Sahupuri-Karamnasha ckt, 132kV Sahupuri-Chandauli ckt, 132kV Sahupuri-Sadat ckt and 132kV Sahupuri-Dhanapur ckt. Reason of tripping of these lines are yet to be received. vi)As per PMU at Varanasi(PG), at 15:54 hrs, Y-N phase to earth fault with delayed fault clearance time of 400msec is observed (Reason for delayed fault clearance is yet to receive). vii)As per SCADA, at 15:54 hrs, change in demand of approx. 100 MW in UP control area. viii)By 18:29 hrs, 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) D/C and 400/220 kV 500 MVA ICT-2 were charged.	1)400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 2)400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-2 3)400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1 4)400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-2 5)400/220 kV 500 MVA ICT 2 at Sahupuri(UP) 6)132 KV Sahupuri(UP)-Karamnasa(BS) (UP) Ckt-1
7	GI-2	Uttar Pradesh	10-07-2024 18:37	10-07-2024 22:59	04:22	0	60	0.000	0.085	53214	70406	i)400/220kV Sahupuri(UP) has double main double scheme at 400kV and 220kV level. ii)During antecedent condition at 18:35 hrs, 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1 and 400/220 kV 500 MVA ICT-2 were connected to 400kV bus-1 and 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-2 were connected to 400kV bus-2 at 400kV Sahupuri(UP) S/s. 400/220 kV 500 MVA ICT-1 at Sahupuri(UP) is under installation (commissioning) process. 400 KV Varanasi(PG)-Sahupuri(UP) (PG) D/C was not in service. iii)As reported at 18:37 hrs, Y-N phase to earth fault occurred in GIS compartment at 400kV Sahupuri(UP) (exact location of fault is yet to received). iv)On this fault, 400KV Sahupuri(UP)-Biharshariff(PG) (PG) D/C tripped (fault current Iy=~ 1.3kA from Sahupuri end) only from Sahupuri(UP) end on zone-4 distance protection. 400/220kV 500 MVA ICT-2 at Sahupuri(UP) also tripped (details of protection operation is yet to receive). v)As per PMU at Varanasi(PG), at 18:37 hrs, Y-N phase to earth fault with delayed fault clearance time of 240msec is observed (Reason for delayed fault clearance is yet to receive). vi)As per SCADA, at 18:37 hrs, change in demand of approx. 60 MW in UP control area. vii)At 18:56 hrs 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 was charged at Sahupuri(UP) S/s. Charging attempt of 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-2 was not taken because it was suspected that fault at 15:54 hrs was in the bay of this line.	1)400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-1 2)400 KV Sahupuri(UP)-Biharshariff(PG) (PG) Ckt-2 3)400/220 kV 500 MVA ICT 2 at Sahupuri(UP)
8	GI-2	Uttar Pradesh	10-07-2024 19:25	10-07-2024 22:57	03:32	0	0	0.000	0.000	55759	72471	i)400/220kV Sahupuri(UP) has double main double scheme at 400kV and 220kV level. ii)During antecedent condition at 19:23 hrs, 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 was connected to 400kV bus-2 at 400kV Sahupuri(UP) S/s. 400/220 kV 500 MVA ICT-1 at Sahupuri(UP) is under installation (commissioning) process. 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) D/C and 400/220 kV 500 MVA ICT-2 were not in service. iii)As reported, at 19:25 hrs, Y-N phase to earth fault occurred in GIS compartment at 400kV Sahupuri(UP) (exact location of fault is yet to receive). iv)On this fault 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 tripped (fault current Iy=~ 4.7kA from Varanasi end) only from Varanasi end on zone-2 distance protection. v)As per PMU at Varanasi(PG), at 19:25 hrs, Y-N phase to earth fault with delayed fault clearance time of 400msec is observed (Reason for delayed fault clearance is yet to receive). vi)As per SCADA, at 19:25 hrs, no change in demand in UP control area. vii)During these three tripping events, 400/220kV Sahupuri(UP) S/s connected with grid through 220kV Sahupuri-Bhelpur (UP) ckt and interconnector of 220kV Sahupuri(UP) S/s. viii)Restoration of 400 KV Sahupuri(UP)-Biharshariff(PG) (PG) D/C, 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1 and 400/220 kV 500 MVA ICT-2 at Sahupuri(UP) started from 22:57 hrs by taking all these elements on 400kV bus-1 at Sahupuri(UP) and 400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-2 is still not charged.	1)400 KV Varanasi(PG)-Sahupuri(UP) (PG) Ckt-1
9	GI-2	Delhi	12-07-2024 11:55	12-07-2024 12:32	00:37	0	0	0.000	0.000	65549	73566	i)765/400kV Jhatikara(PG) has one and half bus arrangement at 400kV side. ii)During antecedent condition, 400 KV Jhatikara-Dwarka (PG) ckt was not in service and due to high loading of 400 KV Bamnoli(DV)-Jhatikara(PG) (DTL) Ckt (~1570MW at 10:15 hrs), 400 KV Jhatikara-Dwarka (PG) ckt taken into service at 10:16 hrs. iii)At 10:20 hrs, 765/400 kV 1500 MVA ICT-1 & 2 were taken into emergency outage due hotspot/sparking in their isolators by opening their tie breakers. This led to reversal of power flow in 400 KV Bamnoli(DV)-Jhatikara(PG) (DTL) Ckt (i.e. Bamnoli to Jhatikara) of approx. 145 MW which was evacuating through 400 KV Jhatikara-Dwarka (PG) ckt. iv)At 11:37 hrs, 400 KV Jhatikara(PG)-Mundka(DV) (DTL) Ckt-1 (~1075MW) hand tripped (emergency shutdown) from Mundka(DV) end due to hotspot on the bay of same line at Mundka(DV) end. v)Due to tripping of 400 KV Jhatikara(PG)-Mundka(DV) (DTL) Ckt-1, the load of ckt-1 shifted on 400 KV Jhatikara(PG)-Mundka(DV) (DTL) Ckt-2 and due to overloading, 400 KV Jhatikara(PG)-Mundka(DV) (DTL) Ckt-2 (~1925 MW) also tripped at 11:55 hrs. vi)As per PMU at Jhatikara(PG), fluctuation in voltage and no fault in system is observed. vii)As per SCADA, no change in demand of Delhi control area.	1)765/400 kV 1500 MVA ICT 1 at Jhatikara(PG) 2)765/400 kV 1500 MVA ICT 2 at Jhatikara(PG) 3)400 KV Jhatikara(PG)-Mundka(DV) (DTL) Ckt-1 4)400 KV Jhatikara(PG)-Mundka(DV) (PG) Ckt-2
10	GI-2	Rajasthan	13-07-2024 04:33	13-07-2024 07:13	02:40	0	0	0.000	0.000	50388	66264	i)765/400/220kV Fatehgarh-2(PG) has one and half bus arrangement at 765kV side. ii)During antecedent condition, power flow from Fatehgarh-2 to Bhadla-2 through 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PBTL) Ckt-3 & 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PFTL) Ckt-1 were 17 MW and 16 MW respectively. iii)At 04:33:41.642 hrs, 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PBTL) Ckt-3 tripped on R-N phase to earth fault (as reported). iv)As per PMU at Fatehgarh-2(PG), R-N phase to earth fault with fault clearing time of 120msec is observed. v)At 04:33:47.041 hrs, 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PFTL) Ckt-1 tripped on overvoltage protection. As per DR, voltage shoot up to 810kV (~1.06 pu) on 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PFTL) Ckt-1. vi)As per SCADA, no change in demand of Rajasthan control area and no change in RE generation.	1)765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PBTL) Ckt-3 2)765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PFTL) Ckt-1

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	(GI 1or GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
11	GI-2	Uttar Pradesh	14-07-2024 15:53	14-07-2024 16:08	00:15	0	250	0.000	0.342	56035	73115	i) 220kV Lucknow(UP) has double main and transfer bus scheme at 220kV level. ii) During antecedent condition, 400/220kV 500 MVA ICT-1 & 2, 220/132kV 200 MVA ICT-1 & 2, 220kV Lucknow-Hardoi Road (UP) ckt & 220kV Lucknow-Unnao (UP) ckt were connected to 220kV bus-1 and 220kV lines from Lucknow(UP) to Bachrawan, Gomatinagar, Kanpur Road & 220/132kV 200MVA ICT-1 & 2 connected to 220kV bus-2 at 220kV Lucknow(UP) S/s. 220kV Lucknow-Kanpur Road (UP) ckt was not in service during the event. iii) As reported, at 15:53 hrs, R-N phase to earth fault occurred on 220kV bus-1 which led to tripping of all elements connected to 220kV bus-1 at 220kV Lucknow(UP). Bus bar protection failed to operate and 400/220 kV 500 MVA ICT-1 & 2 tripped on LBB protection (Type of protection operated in tripping of other elements is yet to receive) iv) As per PMU at Lucknow(PG), R-N phase to earth fault with delayed fault clearance time of 880ms is observed (Reason for delayed fault clearance is yet to receive). v) As per SCADA, change in demand of approx. 280 MW in UP control area. However, approx. 250 MW load loss in UP control area as per SLDC-UP.	1) 400/220 kV 500 MVA ICT 1 at Lucknow(UP) 2) 400/220 kV 500 MVA ICT 2 at Lucknow(UP) 3) 220kV Lucknow-Hardoi Road (UP) ckt 4) 220kV Lucknow-Unnao (UP) ckt 5) 220/132 kV 200 MVA ICT 1 at Lucknow(UP) 6) 220/132 kV 200 MVA ICT 2 at Lucknow(UP)
12	GD-1	Haryana and Delhi	16-07-2024 22:10	17-07-2024 00:30	02:20	0	1580	0.000	1.956	56799	80778	i) During antecedent condition, 220 kV Palli S/S importing load from 220 KV Samaypur (BB)-Palli (HV) (HVPNL) Ckt-1 & Ckt-2, 220 KV Badshahpur (HV)-Palli (HV) (HVPNL) Ckt-1 & ckt-2 and 220 KV Sector-56 (Gurgaon) -Palli (HV) (HVPNL) Ckt-1 & Ckt-2 and feeding that load to 220 KV Palla (HV) (Sec-46) & 220 KV Palli (2*100MVA+1*160MVA) S/S. ii) As reported, to manage the line loading on sector-72 Gurgaon ckt, 220 KV Sector 52 (HV) (Sec-56 Gurgaon)-Palli (HV) (HVPNL) Ckt-1 was opened at 22:10 hrs on the instruction of SLDC-Haryana. This led to sparking on the 220 KV Sector 52 (HV) (Sec-56 Gurgaon)-Palli (HV) (HVPNL) Ckt-2 at Palli S/S end. iii) At the same time, busbar protection operated at 220kV Palli(HV) due to which all the elements connected to 220kV Bus-1 and 2 at Palli(HV) tripped and complete blackout occurred at Palli(HV) S/s. iv) As per PMU, R-Y phase to phase fault with delayed fault clearing time of 880 ms was observed. v) As per SCADA, change in demand of approx. 600 MW and 980 MW in Delhi and Haryana control area respectively were observed. However, as reported, approx. 400 MW load loss occurred at Palli & Sec-46 (Faridabad). Rest of the change in demand is suspected due to stalling of induction motor.	1) 220 KV Samaypur (BB)-Palli (HV) (HVPNL) Ckt-1 2) 220 KV Samaypur (BB)-Palli (HV) (HVPNL) Ckt-2 3) 220 KV Badshahpur (HV)-Palli (HV) (HVPNL) Ckt-1 4) 220 KV Badshahpur (HV)-Palli (HV) (HVPNL) Ckt-2 5) 220 KV Palla (HV) (Sec-46) -Palli (HV) (HVPNL) Ckt-1 6) 220 KV Palla (HV) (Sec-46) -Palli (HV) (HVPNL) Ckt-2 7) 220 KV Sector 52 (HV) (Sec-56 Gurgoan)-Palli (HV) (HVPNL) Ckt-1 8) 220 KV Sector 52 (HV) (Sec-56 Gurgoan)-Palli (HV) (HVPNL) Ckt-2
13	GI-1	Jammu and Kashmir	18-07-2024 11:01	18-07-2024 12:51	01:50	0	210	0.000	0.257	69460	81592	i) 220/132kV Ziankote S/s have two bus at 220kV side i.e., main bus & reserve bus. 220kV Amargarh-Ziankote ckt-1&2 are on the same tower (D/C tower) and line length is ~21.4km. ii) During antecedent condition, 220kV Amargarh(INDIGRID) –Ziankote(JK) D/C was carrying 109 MW each and feeding Ziankote load. iii) As reported, at 11:01 hrs, 220 KV Amargarh(INDIGRID)-Ziankote(JK) (PDD JK) D/C tripped from both ends on B-N phase to earth fault. During patrolling it was found that fault occurred due to vegetation fire in bottom of the line. iv) As per DR of both the circuits of Amargarh end, Amargarh end distance protection relay sensed B-N fault in Z-1 (15.66km) in line-1 and in Z-2(21.69km) in line-2. Both the lines tripped instantaneously from Amargarh end. Fault current was ~4kA. v) As confirmed by Amargarh(INDIGRID), in view of non-availability of carrier communication and A/R scheme at Ziankote end, A/R has been kept disabled at Amargarh end and time delay of Z-2 also kept as instantaneous at Amargarh end. vi) As per PMU at Amargarh(PG), B-N phase to earth fault which cleared within 120 msec is observed. vii) As per SCADA, change in demand of approx. 210MW is observed in J&K control area.	1) 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-1 2) 220 KV Amargarh (INDIGRID)-Ziankote(JK) (PDD JK) Ckt-2
14	GD-1	Uttarakhand	19-07-2024 21:31	19-07-2024 22:03	00:32	300	30	0.526	0.037	57033	80484	i) During antecedent condition, all the four 30MW units of Khodri and 60 MW units of Chhibro were running and total active power generation of Khodri and Chhibro was approx. 89 MW and 196 MW (as per SCADA). Total generation of Chhibro was evacuating through 220 KV Khodri-Chhibro (UK) Ckt-1 & 2. ii) As reported, at 21:31 hrs, while taking out 30MW Khodri Unit-2, B-phase pole of CB of Unit-2 did not open. This led to LBB protection operation which further resulted in tripping of all the elements connected to both the buses at 220kV Khodri(UK) and complete blackout occurred at 220kV Khodri(UK) S/s. iii) Due to tripping of 220 KV Khodri-Chhibro (UK) Ckt-1 & 2, 60 MW Chhibro Unit-1, 2, 3 & 4 also tripped due to loss of evacuation path and complete blackout occurred at 220kV Chhibro(UK) S/s. iv) As per PMU, no fault was observed in the system. v) As per SCADA, change in demand and generation of approx. 30 MW and 300 MW respectively in Uttarakhand control area were observed. vi) As remedial action taken, over hauling & testing of generator CB has been performed and found satisfactory.	1) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 2) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2 3) 220 KV Khodri(UK)-Sarsawan(UP) (UP) Ckt 4) 220 KV Khodri(UK)-Saharanpur(UP) (UP) Ckt 5) 220 KV Khodri-Chhibro (UK) Ckt-1 6) 220 KV Khodri-Chhibro (UK) Ckt-2 7) 30 MW Khodri Unit-1, 2, 3 & 4 8) 60 MW Chhibro Unit-1, 2, 3 & 4
15	GI-2	Punjab	19-07-2024 18:50	19-07-2024 20:27	01:37	0	245	0.000	0.322	57860	76105	i) 400/220kV Patiala(PG) has one and half bus scheme at 400kV level and double main & transfer bus scheme at 220kV level. ii) During antecedent condition, 400/220kV 315 MVA ICT-1 & 500 MVA ICT-3, 220kV Bahadurgarh-I, Nabha-I, Ablowal-I were connected at 220kV Bus-1 and 400/220kV 315 MVA ICT-2 & 500 MVA ICT-4, 220kV Bahadurgarh-II, Nabha-II, Ablowal-II were connected at 220kV Bus-2. 400/220kV ICT-1,2,3 & 4 were carrying approx. 156MW, 153MW, 243MW & 238 MW respectively. 220kV D/C to Nabha, Bahadurgarh & Ablowal were carrying approx. 171MW, 98MW & 127MW respectively per circuit. iii) As reported at 18:50 hrs, B-N phase to earth fault occurred on 220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-1. Fault location was ~7.3km from Nabha end. Distance protection at Patiala end sensed fault in Z-2 and initiated tripping command however, breaker at Patiala end failed to open. This further led to the operation of LBB protection of Nabha-I bay at Patiala(PG). iv) On the result of LBB protection operation, 400/220kV 315 MVA ICT-1, Ablowal-I, bus coupler tripped however, 400/220kV 500 MVA ICT-3 & 220kV Bahadurgarh-I didn't trip. v) Further, 400/220kV 500 MVA ICT-3 tripped on over current earth fault protection operation and 220kV Bahadurgarh-I tripped from Bahadurgarh end only. vi) Further, at the same time, Nabha-II, Ablowal-II also tripped due to overloading. vii) At 18:50:33 hrs, 220 KV Bahadurgarh(PS)-Patiala(PG) (PSTCL) Ckt-2 tripped on another B-N fault. As reported, fault occurred due to conductor snapping at distance ~1.5km from Bahadurgarh end. viii) As per PMU at Patiala(PG), B-N phase to earth fault at 18:50:15 hrs & 18:50:33 hrs with fault clearance time of 2400 msec at 18:50:15 hrs and 120 msec at 18:50:33 hrs is observed. ix) As per SCADA, change in demand of approx. 245MW is observed in Punjab control area. x) As reported by POWERGRID(NR-2), CB operating mechanism problem of 220kV Nabha-I line has been rectified and reason of non-tripping of 400/220kV 500 MVA ICT-3 & 220kV Bahadurgarh-I at Patiala(PG) on LBB operation is under investigation.	1) 220KV Bus 1 at Patiala(PG) 2) 400/220 kV 315 MVA ICT 1 at Patiala(PG) 3) 400/220 kV 315 MVA ICT 3 at Patiala(PG) 4) 220 KV Bahadurgarh(PS)-Patiala(PG) (PSTCL) Ckt-1 5) 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-1 6) 220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-1 7) 220 KV Bahadurgarh(PS)-Patiala(PG) (PSTCL) Ckt-2 8) 220 KV Patiala(PG)-Ablowal(PS) (PSTCL) Ckt-2 9) 220 KV Patiala(PG)-Nabha(PS) (PSTCL) Ckt-2

Details of Grid Events during the Month of July 2024 in Northern 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 GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
16	GI-1	Delhi	20-07-2024 10:46	20-07-2024 11:02	00:16	0	227	0.000	0.283	68287	80318	i)During antecedent condition, 220/66 kV 160 MVA ICT-4 at Mehrauli(DTL) was under shutdown (as informed by SLDC Delhi). ii)As reported, at 10:45 hrs, 66 kV incomers of 200/66 kV 100 MVA ICT-1, 2 & 3 at Mehrauli(DTL) tripped on over-current protection operation (exact reason, location and nature of fault yet to be shared). iii)As per PMU, B-N phase to earth fault with delayed fault clearing time of 400 ms followed by Y-N phase to earth fault with fault clearing time of 120 ms was observed. iv)As per SCADA, change in demand of approx. 290 MW was observed in Delhi. However, as reported by SLDC-Delhi, load loss of approx. 227 MW occurred in Delhi.	1) 66 kV incomer of 200/66 kV 100 MVA ICT-1 at Mehrauli(DTL) 2) 66 kV incomer of 200/66 kV 100 MVA ICT-2 at Mehrauli(DTL) 3) 66 kV incomer of 200/66 kV 100 MVA ICT-3 at Mehrauli(DTL)
17	GI-2	Delhi	28-07-2024 18:24	28-07-2024 18:46	00:22	0	95	0.000	0.134	53018	70818	i)400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) D/C and 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) D/C are on same towers. ii)During antecedent condition, incoming power at Maharani Bagh(PG) through 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) D/C and 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) Ckt-1 was approx. 295 MW and 292 MW respectively (as per SCADA). iii)As reported, at 18:24 hrs, 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) Ckt-1 and 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) Ckt-2 tripped on Y-B phase to phase fault and at the same time 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) Ckt-1 also tripped from Mandaula(PG) end (reason of tripping is yet to be received). iv)During patrolling of Ckts, it was found that Y-B phase to phase fault occurred on 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) Ckt-1 and 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) Ckt-2 due to kite thread. v)As per PMU at Maharani Bagh(PG), Y-B followed by Y-B phase to phase fault with fault clearing time of 120msec & 120msec is observed. vi)As per DR of Bawana(DTL) end of 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) Ckt-1, Y-B phase to phase fault (Iy=~9.8kA & Ib=~10.3kA) sensed in zone-2 with carrier signal received is observed. Fault distance was 39.58km from Bawana(DTL) end (as reported). vii)As per SCADA, change in demand of approx. 95 MW in Delhi control area.	1) 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) Ckt-1 2) 400 KV Mandaula(PG)-Maharani Bagh(PG) (DTL) Ckt-2 3) 400 KV Bawana(DTL)-Maharani Bagh(PG) (DTL) Ckt-1
18	GI-1	Delhi	28-07-2024 21:53	28-07-2024 22:14	00:21	0	110	0.000	0.136	56168	81095	i)During antecedent condition, 200/66 kV 100 MVA ICT-1 & 3 at Mehrauli(DTL) were connected to 220kV Bus-1 at Mehrauli(DTL) and 220/66 kV 100MVA ICT-3 and 160 MVA ICT-4 at Mehrauli(DTL) were connected to 220kV Bus-2 at Mehrauli(DTL). 220kV Bus coupler was in ON position whereas 66kV Bus coupler was in OFF position (as informed by SLDC Delhi). ii)As reported, at 21:53 hrs, 200/66 kV 100 MVA ICT-1 at Mehrauli(DTL) tripped on Restricted earth fault protection operation (exact nature, location and reason of fault yet to be shared). iii)During the same time, 66 kV incomer of 200/66 kV 100 MVA ICT-3 at Mehrauli(DTL) tripped without any relay indication (exact reason of tripping yet to be shared). iv)As per PMU, no fault is observed in the system at 21:53 hrs. v)As reported by SLDC Delhi, load loss of approx. 110 MW occurred at 21:53hrs. Major affected load areas were Vasant Kunj C Block, C Dot, Fatehpur Beri, Caffims and 220kV Mehrauli.	1) 200/66 kV 100 MVA ICT-1 at Mehrauli(DTL) 2) 66 kV incomer of 200/66 kV 100 MVA ICT-3 at Mehrauli(DTL)
19	GI-1	Delhi	28-07-2024 22:05	28-07-2024 22:14	00:09	0	198	0.000	0.242	56370	81704	i)As reported, at 22:05 hrs, 66 kV incomers of 200/66 kV 100 MVA ICT- 2 at Mehrauli(DTL) tripped on over-current (B-ph) protection operation. ii)During the same time, 66 kV incomers of 200/66 kV 160 MVA ICT- 4 at Mehrauli(DTL) tripped without any relay indication (exact reason of tripping yet to be shared). iii)As per PMU, no fault is observed in the system at 22:05 hrs. iv)As per SCADA, change in demand of approx. 240 MW is observed in Delhi control area. However, as reported by SLDC Delhi, load loss of approx. 198 MW occurred at 21:53hrs. Major affected load areas were Vasant Kunj C Block, Malviya Nagar, Shivalik, TKD, DC Saket, IGNOU, C Dot, Fatehpur Beri, Caffims, Bijwashan and 220kV Mehrauli.	1) 66 kV incomer of 200/66 kV 100 MVA ICT-2 at Mehrauli(DTL) 2) 66 kV incomer of 200/66 kV 160 MVA ICT-4 at Mehrauli(DTL)
20	GI-1	Delhi	29-07-2024 14:40	29-07-2024 15:03	00:23	0	125	0.000	0.146	70093	85659	i)220/66/33kV Shalimarbagh(DTL) has double main Bus arrangement at 220kV side. ii)During antecedent condition, 220 kV Shalimarbagh-Rohini Ckt-1 (No load), 220kV Shalimargarh-SGTN Ckt-1 & 2, 220kV Shalimarbagh-DMRC Ckt-1, 220kV Shalimarbagh-Wazirpur Ckt-1 & 2 and 220 kV Bawana- Shalimarbagh Ckt-1 were connected to 220kV Bus-1 and 100 MVA 220/33kV ICT-1 & 3 and 220/66kV ICT-2 at Shalimarbagh(DTL), 220 kV Shalimarbagh-Rohini Ckt-2 (No load), 220kV Shalimarbagh-DMRC Ckt-2 and 220 kV Bawana- Shalimarbagh Ckt-2 were connected to 220kV Bus-2 at Shalimarbagh(DTL) S/s. 220kV bus coupler was in ON position (as informed by SLDC Delhi). iii)As reported, at 14:40 hrs, heavy flashover was observed in R-ph line isolator at Bawana end of 220 KV Bawana- Shalimarbagh (DTL) Ckt-2 and line tripped from Shalimarbagh end. As reported and as per SCADA SOE, line was manually opened from Bawana end at 14:42:17hrs. iv)During the same time, 100 MVA 220/33kV ICT-1 & 3 and 220/66kV ICT-2 at Shalimarbagh(DTL) also tripped (exact nature of protection operated yet to be shared). v)As per PMU at Abdullapur(PG), no fault is observed in the system. vi)As per SCADA, change in demand of approx. 185 MW in Delhi control area. However, as reported by SLDC-Delhi, load loss of approx. 125 MW occurred. Major load affected area were Tigipur, Haiderpur, Pitampura-III & I, Rohini-I, Wazirpur-II, Ranibagh, SMB-FC and SMB-Khosla.	1) 220 KV Bawana- Shalimarbagh (DTL) Ckt-2 2) 220/33kV 100 MVA ICT-1 at Shalimarbagh(DTL) 3) 220/66kV 100 MVA ICT-2 at Shalimarbagh(DTL) 4) 220/33kV 100 MVA ICT-3 at Shalimarbagh(DTL)

Details of Grid Events during the Month of July 2024 in Northern 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 GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
21	GD-1	Uttarakhand	29-07-2024 13:56	29-07-2024 14:28	00:32	108	0	0.152	0.000	70868	84775	i) During antecedent condition, 33MW Unit-1, 2 and 3 at Singoli Bhatwari HEP were generating approx. 36MW each. 220 KV Singoli Bhatwari (Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-2 was under planned outage. Total generation of 108MW of Singoli Bhatwari was evacuating through 220 KV Singoli Bhatwari (Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1. ii) As reported, at 13:56 hrs, 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 tripped on R-N phase to ground fault (exact reason of fault yet to be shared). iii) As per DR, fault current was ~2.44kA and fault distance was 53.2 km (69.1%) from Srinagar(UK) end; fault sensed in zone-1 and fault clearing time was ~50 ms.. iv) Due to tripping of 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1, 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. v) As per PMU at Roorkee(PG), R-N phase to ground fault is observed with fault clearing time of 80 ms. vi) As per SCADA, generation loss of approx. 108MW at Singoli Bhatwari HEP is observed.	1) 220 KV Singoli Bhatwari (Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 2) 33MW Unit-1 at Singoli Bhatwari HEP 3) 33MW Unit-2 at Singoli Bhatwari HEP 4) 33MW Unit-3 at Singoli Bhatwari HEP
22	GI-1	Rajasthan	30-07-2024 11:38	30-07-2024 12:52	01:14	370	0	0.524	0.000	70619	86135	i) 400/220kV Bhadla(RS) has double main and transfer bus arrangement at 220kV side. ii) During antecedent condition, 220 kV Bhadla(RS)-Saurya Urja-2 and 220kV Bhadla(RS)-RSDCL I Ckt-2 were carrying approx. 242 MW & 128 MW respectively (reported data). iii) As reported, at 11:38hrs, B-ph jumper of 220kV Bhadla(RS)-Saurya Urja Ckt-2 snapped from Main Bus at Bhadla(RS) which led to tripping of 220kV Bhadla(RS)-Saurya Urja Ckt-2. iv) During the same time, 220 kV Bus sectionalizer-I (Bay no. 09) and 220 kV Bus Coupler-I (Bay no. 13) at Bhadla(RS) also tripped due to B-N phase to ground fault (As per PMU, Y-N fault; phase sequence issue is observed). v) Further as reported, 220kV Bhadla(RS)-RSDCL I Ckt-2 also tripped from RSDCL I end only due to LBB operation at the same time (exact reason of LBB operation yet to be shared). vi) As per PMU at Bhadla(PG), Y-N phase to ground fault is observed with delayed fault clearing time of 160 ms. vii) As per SCADA, change in solar generation of approx. 905MW is observed in Rajasthan control area. viii) As reported by SLDC Rajasthan, approx. 370 MW of solar generation loss occurred in Rajasthan control area and there is total approx. 730 MW reduction in solar generation by RE plants connected at Bhadla(RS).	1) 220kV Bhadla(RS)-Saurya Urja Ckt-2 2) 220 kV Bus sectionalizer-I (Bay no. 09) 3) 220 kV Bus Coupler-I (Bay no. 13) 4) 220kV Bhadla(RS)-RSDCL I Ckt-2
23	GD-1	Delhi	30-07-2024 14:55	30-07-2024 15:05	00:10	0	304	0.000	0.347	71027	87542	i) 220kV Najafgarh(DTL) has double main bus arrangement at 220kV level. ii) During antecedent condition, incoming power at Najafgarh(DTL) S/s was approx. 335 MW through 220KV Bamanauli-Najafgarh (DTL) D/C. 220kV Najafgarh-Mundka (DTL) Ckt & 220kV Najafgarh-Kanjhawala (DTL) Ckt were not in service. iii) As reported, at 14:55 hrs, 220KV Bamanauli-Najafgarh (DTL) Ckt-2 tripped on B-N phase to earth fault and 220KV Bamanauli-Najafgarh (DTL) Ckt-1 tripped on O/C protection. iv) As reported, 220KV Bamanauli-Najafgarh (DTL) Ckt-2 tripped on zone-1 distance protection on B-N fault with fault distance of 6.3km from Najafgarh(DTL) end and on differential protection from Bamanauli(DTL) end. v) As 220KV Bamanauli-Najafgarh (DTL) Ckt-2 tripped, complete load shifted on 220KV Bamanauli-Najafgarh (DTL) Ckt-1 and Ckt-1 also tripped on overcurrent protection from Najafgarh(DTL) end. vi) As per PMU at Dwarka(PG), B-N phase to earth fault with fault clearing time of 120msec is observed. vii) As 220kV Najafgarh-Mundka (DTL) Ckt & 220kV Najafgarh-Kanjhawala (DTL) Ckt were not in service and 220KV Bamanauli-Najafgarh (DTL) D/C also tripped, Najafgarh (DTL) lost its connectivity from Grid and blackout occurred at 220kV Najafgarh(DTL) S/s. viii) As per SCADA, change in demand of approx. 285 MW in Delhi control area. However, SLDC-Delhi reported load loss of approx. 304 MW in Delhi control area.	1) 220KV Bamanauli-Najafgarh (DTL) Ckt-1 2) 220KV Bamanauli-Najafgarh (DTL) Ckt-2
24	GI-1	Himachal Pradesh	31-07-2024 22:40	31-07-2024 23:33	00:53	0	140	0.000	0.203	54106	68837	i) 220kV Giri(HP) S/s has double main bus arrangement at 220kV level. ii) During antecedent condition, incoming power at Giri(HP) S/s through 220kV Khodri(UK)-Giri(HP) (UK) D/C was 105MW. iii) As reported, at 22:40 hrs, Y-phase LA of 220/132kV 100 MVA ICT-2 at Giri(HP) S/s blasted which caused Y-N phase to earth fault. On this fault 220/132kV 100 MVA ICT-1 & 2 tripped on overcurrent earth fault protection (ICT-1 at Giri(HP) should not trip on this fault, reason for the same is yet to be received). iv) On the same fault, 220kV Khodri(UK)-Giri(HP) (UK) Ckt-2 tripped only from Khodri(UK) end on Y-N phase to earth fault. Fault sensed in zone-3 with fault current of Iy=~2.4kA from Khodri(UK) end. v) As per PMU at Saharanpur(PG), Y-N phase to earth fault with fault clearing time of 120msec is observed. vi) As per SCADA, change in demand of approx. 110 MW in HP control area. However, SLDC-HP reported load loss of approx. 140 MW in HP control area.	1) 220 KV Khodri(UK)-Majri/Giri(HP) (UK) ckt-2 2) 220/132kV 100 MVA ICT-1 at Giri(HP) 3) 220/132kV 100 MVA ICT-2 at Giri(HP)

Details of Grid Events during the Month of July 2024 in Western Region

Sl No.	Category of Grid Event (GI 1or GI 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	GD-1	WR	02-07-2024 07:33	02-07-2024 15:56	08:23	282.07	-	0.42%	-	67515	52976	i)220kV Baghpat(UP) has main and transfer bus scheme at 220kV level. ii)During antecedent condition, incoming power at Baghpat(UP) was approx. 80 MW through 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C, 220/132kV 160MVA ICT-1 and 220/132kV 100MVA ICT-2 were connected to 220kV main bus. 220 KV Baghpat(PG)-Baghpat(UP) (UP)	Tripping of following Elements: 220 kV Bhuj-II-Nakhatrana-1
2	GD-1	WR	05-07-2024 06:25	05-07-2024 07:39	01:14	24	-	0.04%	-	66396	55434	At 06:25 Hrs/05-07-2024, 220kV Bhuj- Kotda Madh (Netra) line auto reclosed successfully from Bhuj end and tripped at Kotda madh end due to Y-N fault. Due to loss of evacuation path, wind generation loss of 24MW occurred at Kotda Madh (Netra)	Tripping of following Elements: 220 kV Bhuj-Kotda Madh-1
3	GD-1	WR	08-07-2024 00:02	08-07-2024 04:34	04:32	120	-	0.18%	-	67421	56031	At 00:02 Hrs/08-07-2024, 220kV Bhuj- Gadhsisa line tripped on R-Y fault due to falling of Nirona-Junacay line conductor. Due to loss of evacuation path, generation loss of 120MW occurred at Gadhsisa WPP.	Tripping of following Elements: 220 kV Bhuj-Gadhsisa-1
4	GD-1	WR	09-07-2024 15:47	09-07-2024 16:39	00:52	218.5	-	0.31%	-	70415	58699	At 15:47 Hrs/09-07-2024, 220 kV Bhuj- Kotda Madh tripped on B-N fault at Bhuj end & on DT receipt at Kotda Madh end. At the same time, 220 kV Bhuj- Nanavalka tripped at Bhuj end only on R-N fault. At the same time, 220kV Bhuj- Gadhsisa tripped at Gadhsisa end only due to maloperation. Due to loss of evacuation path, generation loss of 111 MW, 37.5 MW & 70 MW occurred at Gadhsisa, Nanavalka & Kotda Madh WPPs respectively.	Tripping of following Elements: 220 kV Bhuj-Gadhsisa-1 220 kV Bhuj-Kotda Madh-1 220 kV Bhuj-Nanavalka
5	GD-1	WR	15-07-2024 13:26	15-07-2024 17:10	03:44	-	-	-	-	66921	57735	At 13:26 Hrs/15-07-2024, 400KV-Jabalpur-PS-Jhabua-1 tripped on R-N fault from Jhabua end, A/R successful from Jabalpur end. Ckt-2, Bus-2 and Jhabua Unit-1 were already under planned outage due to annual overhauling work. Therefore, 400 kV Jhabua S/S became dead. No generation loss reported as the Unit was already out.	Tripping of following Elements: 400 kV Jabalpur(PS) - Jhabua - I Jhabua - 400KV - Bus 1
6	GD-1	WR	15-07-2024 20:03	15-07-2024 22:03	02:00	22	-	0.03%	-	73890	58501	At 20:03 Hrs/15-07-2024, 220kV Baranda Bhuj tripped on R-N fault from Baranda end, A/R successful from Bhuj end. Due to loss of evcuation path, Baranda Wind RE station went to blackout leading to generation loss of 22 MW.	Tripping of following Elements: 220 kV Bhuj-Baranda-1
7	GD-1	WR	23-07-2024 07:23	23-07-2024 16:56	09:33	120	-	0.17%	-	69157	55551	At 07:23 Hrs/23-07-2024, 220/33 kV Gadhsisa ICT-1 tripped due to operation of Restricted earth fault (REF) Relay, which resulted in loss of evacuation path from 33 kV to 220 kV side as 220/33 kV Gadhsisa ICT-2 was already in tripped condition since 21:15 Hrs/22.07.2024 due to sparking in 33 KV side isolator. About 120 MW wind generation loss occurred at 220 KV Gadhsisa WPP.	Tripping of following Elements: 220KV/33KV Gadhsisa-ICT-1
8	GD-1	WR	25-07-2024 09:17	25-07-2024 17:32	08:15	253.16	-	0.39%	-	64438	54172	At 09:17 Hrs 220kV Nakhatrana-Bhuj-II-1 tripped on Y-N fault due to Y-Phase Disc Insulator failure on Tower No.22 from Nakhatrana side. Generation loss of 253.16 MW occurred due to loss of evacuation path.	Tripping of following Elements: 220 kV Bhuj-II-Nakhatrana-1
9	GD-1	WR	25-07-2024 11:33	25-07-2024 12:52	01:19	95	-	0.15%	-	61920	52889	At 11:33 Hrs/25.07.2024, 220kV Srijan Morjhar-Bhuj-II-1 tripped on Z-2, R-N fault at Srijan end only. No indications received. Generation loss of 95 MW occurred due to loss of evacuation path.	Tripping of following Elements: 220kV Srijan Morjhar-Bhuj-II-1
10	GD-1	WR	25-07-2024 17:33	25-07-2024 19:56	02:23	113.7	-	0.18%	-	64524	52709	At 17:33 Hrs/25.07.2024 220kV Srijan Morjhar – Bhuj-II-1 tripped on R-N fault at Srijan end. During inspection by Srijan, main 2, R phase voltage was not available as loose connection identified in Terminal Box, which was tightened. Generation loss of 113.7 MW occurred due to loss of evacuation path.	Tripping of following Elements: 220kV Srijan Morjhar-Bhuj-II-1
11	GD-1	WR	29-07-2024 16:46	30-07-2024 00:01	07:15	-	131	-	0.25%	66129	53429	At 16:46 Hrs/29.07.2024, 220kV Vaghchhipa-Sayali Ckt & 220kV Khadoli-Sayali Ckt tripped on Zone-2, Y-B Fault and 220kV Sayali Switching Substation became dead. After Line patrolling by DNH, Y-phase jumper found broken of 220kV Sayli-Khadoli line at tower location no.28. This resulted in complete load loss of 220kV Alok Industries Ltd. Total Load loss of around 131MW reported.	Tripping of following Elements: 220kV Vaghchhipa-Sayali Ckt 220kV Khadoli-Sayali Ckt 220kV Sayali- Alok Industries Ltd.

Details of Grid Events during the Month of July 2024 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 (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 GI 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	KARNATAKA	01-07-2024 02:53	01-07-2024 12:01	09:08	32	152	0.09%	0.41%	35141	37322	i)220kV Baghpat(UP) has main and transfer bus scheme at 220kV level. ii) During antecedent condition, incoming power at Baghpat(UP) was approx. 80 MW through 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C, 220/132kV 160MVA ICT-1 and 220/132kV 100MVA ICT-2 were connected to 220kV main bus. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C is on the same towers. iii) As per SCADA SOE, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped at 21:37:59.415hrs and 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 tripped at 21:37:59.535 hrs. iv) As reported, at 21:37 hrs, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped on Y-B-N double phase to earth fault and line tripped on zone-1 distance protection operation from both ends. As per Baghpat(UP) reporting, initially a B-ph fault occurred on 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 with fault current - 10.39kA in zone-1. At the same time, jumper at tower no 45 of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 got broken which created line-line (Y-B) fault due to which line got tripped from both ends. v) Further 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 also tripped on B-N phase to earth fault with fault current of ~9.7kA and fault distance of 11.8km from Baghpat(PG) end. As per DR of Baghpat(PG) end, B-N phase to earth fault with no A/R operation is observed and line tripped on zone-1 distance protection operation. Since there was no source remaining at 220kV Baghpat(UP) hence 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 didn't trip from Baghpat(UP) end. vi)As per PMU at Meerut(PG), Y-B phase to phase fault with fault clearance time of 80ms is observed. vii) Due to tripping of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2, Baghpat(UP) lost its connectivity from the grid and 220kV Baghpat(UP) S/s became dead. viii)As per SCADA, change in demand of approx. 68 MW in UP control area. However, SLDC-UP reported 80MW load loss.	220KV-KADAKOLA-KANIYAMPETTA , 220KV-MYSORE-HUNSUR-1 , 220KV-MYSORE-KADAKOLA-1
2	GD - 1	TAMILNADU	03-07-2024 20:53	03-07-2024 21:29	0:36	0	79	0.00%	0.17%	45332	46298	Complete Outage of 230kV Kilpauk SS: During antecedent conditions, 230kV Koratur-Kilpauk was in idle charged condition and 230kV Kilpauk was radially connected to 230kV NCTPS. The triggering incident is the fault in 230kV NCTPS-NCTPSST3 line near to 230kV NCTPS. The fault was cleared within time, however 230kV Kilpauk-NCTPS line tripped at Kilpauk end on Z1 protection in only Main-1. Tripping of the only line connected to Kilpauk led to the complete outage of 230kV Kilpauk station.	230KV-NCTPS-KILPAUK-1 , 230KV-NCTPS-NCTPS STG3-1
3	GD - 1	KARNATAKA	11-07-2024 11:18	11-07-2024 11:45	0:27	104	0	0.20%	0.00%	50990	53603	Complete Outage of 220kV/66kV Tallak SS, 230kV/33kV Sagitur SS and 220kV BARC SS. As per the reports submitted, the triggering incident was 96 relay maloperation in 220kV Bus-1 of 220kV/66kV Tallak SS tripping all elements connected to the Bus-1. Since, 230kV/33kV Sagitur SS and 220kV BARC SS are being radially connected to 220kV Bus-1 of 220kV/66kV Tallak SS, this resulted in complete outage of 230kV/33kV Sagitur SS and 220kV BARC SS	220KV-Chitradurga-TALLAK-1
4	GD - 1	KARNATAKA	12-07-2024 11:54	12-07-2024 12:06	0:12	0	360	0.00%	0.65%	51678.2	55761.41	Complete Outage of 220kV/66kV Manyatha Tech SS, 220kV/66kV ITI, and 220kV/66kV HBR Layout: Triggering incident was tripping of 220kV Yelahanka-Yelahanka PG line-2 at Yelahanka end due to suspected maloperation of 96 trip relay. This led to the overloading of 220kV Yelahanka-Yelahanka PG line-1. Immediately SPS operated in two stages to reduce the flow in 220kV Yelahanka-Yelahanka PG line-1 resulting in the tripping of 150MVA PTRs and 220kV Yelahanka Sahakarnagar line-2 at 220kV Yelahanka SS. This further resulted in overloading of 220kV Yelahanka Sahakarnagar line-1 and tripping of 220kV Sahakarinagar-Manyatha lines on operation of SPS St-2 protection at 220kV Sahakarinagar SS. Due to tripping of these 220kV lines, 220kV/66kV Manyatha Tech SS, 220kV/66kV ITI, and 220kV/66kV HBR Layout became radial on Hoody source, which eventually tripped due to overload, leading to a complete outage of these substations.	220KV-YELHANKA-YELAHANKA DG-2 , 220KV-HOODY-HBR_LAYOUT-1 , 220KV-HOODY-ITI-1 , 220KV-SAHKARI_NAGAR-MANYATA-1 , 220KV-SAHKARI_NAGAR-MANYATA-2 , 220KV-YELHANKA-SAHKARI_NAGAR-2
5	GD - 1	KARNATAKA	17-07-2024 14:55	17-07-2024 15:40	0:45	0	45	0.00%	0.00%	52920.42	48007.53	Complete Outage of 220kV/66kV Chikkamangalore SS of KPTCL: As per the reports submitted, the triggering incident was Y-N fault in 220kV Shimoga Chikmangalore Line. At Chikkamangalore end, the fault was sensed in zone-1 and Y-pole opened. however no protection operated at Chikkamangalore end during subsequent fault in dead time. Fault was cleared by tripping of 220kV Chikkamangalore Hassan line on zone-3 protection at Hassan end with a delay of 800ms. This led to the complete outage of 220kV/66kV Chikkamangalore SS.	220KV-CHIKKAMAGALURU-MRS SHIMOGA-1 , 220KV-HASSAN-CHIKKAMAGALURU-1
6	GD - 1	TAMILNADU	18-07-2024 12:14	18-07-2024 12:30	0:16	40	0	0.00%	0.00%	54290.55	47128.61	Complete Outage of 230kV JSW_Vilathikulam Wind Station: As per the reports submitted, the 230kV TTGS-JSW_Vilathikulam line-1 tripped only at JSW_Vilathikulam end on operation of Y-Ph under voltage stage -1 protection while changing settings in P546 relay. Tripping of the only connected line resulted in the complete outage of 230kV JSW_Vilathikulam Wind Station.	230KV-TTGS-JSW_Vilathikulam-1
7	GD - 1	KARNATAKA	22-07-2024 11:47	22-07-2024 12:09	0:22	950	170	2.00%	0.00%	51797.49	46718.3	Tripping of 220kV Bus-1&2 of 400kV/220kV Jagalur SS and Complete Outage of 220kV/66kV Chitradurga SS, 220kV/66kV Tallak SS, 220kV/66kV Kudligi SS of KPTCL and 220kV Barc SS, 220kV Sagitur SS of KPTCL :As per the reports submitted, the triggering incident was cascaded tripping of 220kV Chitradurga Hiriyur, 220kV Guttur Chitradurga Lines and 400kV/220kV Jagalur ICTS on operation of over current protection. At the same time, all 220kV lines connected to 220kV Tallak SS tripped due to suspected maoperation of 96 trip relay. Tripping of all these elements led to de-energisaiton of 220kV Bus-1& 2 of 400kV/220kV Jagalur SS and complete outage of 220kV/66kV Chitradurga SS, 220kV/66kV Tallak SS, 220kV/66kV Kudligi SS, 220kV Barc SS, 220kV Sagitur SS.	220KV-HIRIYUR-Chitradurga-1 , 400KV/220KV JAGALUR-ICT-1 , 220KV-Chitradurga-TALLAK-1 , 220KV-GUTTUR-Chitradurga-1 , 400KV/220KV JAGALUR-ICT-2
8	GD - 1	KERALA	24-07-2024 09:46	24-07-2024 10:31	0:45	0	36	0.00%	0.00%	49280.56	49903.61	Complete Outage of 400kV/220kV Kottayam SS and 220kV/110kV Ettumanoor SS of KSEB: As per the reports submitted, the triggering incident was high resistance B-N fault in 400kV Kottayam Tirunelveli Line-2. At Tirunelveli end, the fault was sensed in zone-1 and the line tripped only at Tirunelveli end. Due to non-operation of protection at Kottayam end, 400kV Kottayam Tirunelveli Line-1 tripped at Tirunelveli end on zone-2 and all other connected 400kV lines and 220kV lines tripped on operation of DEF protection at remote ends. Tripping of all lines led to complete outage of 400kV/220kV Kottayam SS and 220kV/110kV Ettumanoor SS.	400KV-KOTTAYAM-KOCHI-1 , 400KV-KOTTAYAM-KOCHI-2 , 400KV-TIRUNELVELI-KOTTAYAM-1 , 400KV-TIRUNELVELI-KOTTAYAM-2 , 400KV/220KV KOTTAYAM-ICT-1 , 400KV/220KV KOTTAYAM-ICT-2, 220KV KOTTAYAM-ETTAMANUR, 220KV KOTTAYAM-PALLOM
9	GD - 1	KARNATAKA	27-07-2024 12:49	27-07-2024 15:00	2:11	112	113	0.00%	0.00%	53879.28	45339.17	Complete Outage of 220kV Kodasalli PH of KPCL: 220kV Kodsally PH is operating with single bus with transfer bus configuration. . As per the reports submitted, the triggering incident was B-N fault in 220kV Bus-1 of 220kV Kodsally PH. Immediately BBP operated and all elements connected to the bus tripped. This resulted in complete outage of 220kV Kodsally PH.	220KV KODASALLI-KAIGA 220KV KODASALLI-KADRA 220KV KODASALLI-NAGHJHERI-1 220KV KODASALLI-NAGHJHERI-2
10	GI-1	ANDHRA PRADESH	18-07-2024 17:26	18-07-2024 18:26	01:00	0	0	0.00%	0.00%	49602	43030	Tripping of 220kV Bus-1 of 400kV/220kV KV Kota SS: As per the reports furnished, while test charging the tie feeder-1 (line from 400kV/220kV KV Kota SS to 220kV/132kV KV Kota SS) from 400kV/220kV KV Kota SS end, line tripped on operation of SOTF protection due to YN fault in the line because of insulator failure. Since Y-pole breaker didn't open at 400kV/220kV KV Kota SS, LBB operated resulted in the tripping of all the elements connected to 220kV Bus-1 of 400kV/220kV KV Kota SS.	400KV/220KV KV_KOTA-ICT-1
11	GI-1	ANDHRA PRADESH	19-07-2024 18:46	19-07-2024 20:21	1:35	0	0	0.00%	0.00%	48238	42062	Tripping of 220kV Bus-2 of 400kV/220kV KV Kota SS of APTRANSCO : As per the reports furnished, the triggering incident was YN fault in tie feeder-2 (line from 400kV/220kV KV Kota SS to 220kV/132kV KV Kota SS) from 400kV/220kV KV Kota SS end. Since Y-pole breaker didn't open 400kV/220kV KV Kota SS, LBB operated resulted in the tripping of all the elements connected to 220kV Bus-2 of 400kV/220kV KV Kota SS.	400KV/220KV KV_KOTA-ICT-2

Details of Grid Events during the Month of July 2024 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 1or GI 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	Chatra	08.07.2024 13:10	08.07.2024 14:25	01:15	0	36	0.00%	0.14%	28189	26236	i)220kV Baghpat(UP) has main and transfer bus scheme at 220kV level. ii) During antecedent condition, incoming power at Baghpat(UP) was approx. 80 MW through 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C, 220/132kV 160MVA ICT-1 and 220/132kV 100MVA ICT-2 were connected to 220kV main bus. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C is on the same towers. iii) As per SCADA SOE, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped at 21:37:59.415hrs and 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 tripped at 21:37:59.535 hrs. iv) As reported, at 21:37 hrs, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped on Y-B-N double phase to earth fault and line tripped on zone-1 distance protection operation from both ends. As per Baghpat(UP) reporting, initially a B-ph fault	220kV Latehar-Chatra 220kV Daltongunj-Chatra
2	GD-1	Bokaro	20.07.2024 19:38	20.07.2024 22:18	02:40	00:00	65	0.00%	0.23%	27956	28850	At 19:38 Hrs, during Line opening and isolation process of 220 kV CTPS-BTPS D/C line, bus fault occurred at 220 kV BTPS along with DC supply failure. Both ICTs tripped, causing load loss of approximately 65 MW . Power was extended through 132 kV BTPS-Barhi Line at 22:18 Hrs and subsequently other elements were normalized.	400KV/220KV 315 MVA ICT 1 & 2 AT Bokaro A TPS 220KV Bokaro -Jamshedpur-D/C 220KV/132 KV ATR 1 & 2 at Bokaro 220KV Bokaro -Ramgarh-D/C

Details of Grid Events during the Month of July 2024 in North Eastern Region

Sl No.	Category of Grid Event (GI 1or GI 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	GD I	Pasighat, Roing, Tezu, Namsai areas of Arunachal Pradesh Power System and Chapakhowa area of Assam Power System	03-07-2024 11:21	03-07-2024 11:48	00:27	0	10	0.00%	0.41%	3017	2421	i)220kV Baghpat(UP) has main and transfer bus scheme at 220kV level. ii)During antecedent condition, incoming power at Baghpat(UP) was approx. 80 MW through 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C, 220/132kV 160MVA ICT-1 and 220/132kV 100MVA ICT-2 were connected to 220kV main bus. 220 KV Baghpat(PG)-Baghpat(UP) (UP) D/C is on the same towers. iii)As per SCADA SOE, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped at 21:37:59.415hrs and 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 tripped at 21:37:59.535 hrs. iv)As reported, at 21:37 hrs, 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 tripped on Y-B-N double phase to earth fault and line tripped on zone-1 distance protection operation from both ends. As per Baghpat(UP) reporting, initially a B-ph fault occurred on 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 with fault current - 10.39kA in zone-1. At the same time, jumper at tower no 45 of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-2 got broken which created line-line (Y-B) fault due to which line got tripped from both ends. v)Further 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 also tripped on B-N phase to earth fault with fault current of ~9.7kA and fault distance of 11.8km from Baghpat(PG) end. As per DR of Baghpat(PG) end, B-N phase to earth fault with no A/R operation is observed and line tripped on zone-1 distance protection operation. Since there was no source remaining at 220kV Baghpat(UP) hence 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 didn't trip from Baghpat(UP) end. vi)As per PMU at Meerut(PG), Y-B phase to phase fault with fault clearance time of 80ms is observed. vii)Due to tripping of 220 KV Baghpat(PG)-Baghpat(UP) (UP) Ckt-1 & 2, Baghpat(UP) lost its connectivity from the grid and 220kV Baghpat(UP) S/s became dead.	132 kV Along - Pasighat Line 132 kV Roing - Pasighat Line
2	GD I	Churachandpur Thanlon, Elangkangpokpi, Kakching, Chandel, Thoubal Old, New Thoubal and Kongba area of Manipur Power System and Tamu load of Myanmar Power System	05-07-2024 16:20	05-07-2024 16:35	00:15	0	28	0.00%	1.27%	3121	2202	Churachandpur Thanlon, Elangkangpokpi, Kakching, Chandel, Thoubal Old, New Thoubal and Kongba area of Manipur Power System and Tamu load of Myanmar Power System were connected with rest of NER Grid via 132 kV New Thoubal - Kakching Line, 132 kV Old Thoubal - Kakching Line, 132 kV Kongba - Yaingangpokpi 1 Line and 132 kV Kongba - Yaingangpokpi 2 Line. 400kV-Imphal(PG)-Thoubal-1 line was under outage condition since 18.10.2021, 400kV-Imphal(PG)-Thoubal-2 line was under outage condition since 24.04.2024 and 132kV-Ningthoukhong-Churachandpur D/C lines were under outage condition since 15.06.2024. At 16:20 Hrs of 05.07.2024, 132 kV New Thoubal - Kakching Line, 132 kV Old Thoubal - Kakching Line, 132 kV Kongba - Yaingangpokpi 1 Line and 132 kV Kongba - Yaingangpokpi 2 Line tripped. Due to tripping of these lines, Churachandpur Thanlon, Elangkangpokpi, Kakching, Chandel, Thoubal Old, New Thoubal and Kongba area of Manipur Power System and Tamu load of Myanmar Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power supply was extended to Churachandpur Thanlon, Elangkangpokpi, Kakching, Chandel, Thoubal Old, New Thoubal and Kongba area of Manipur Power System and Tamu load of Myanmar Power System by first charging 132 kV Kongba - Yaingangpokpi 1 Line at 16:35 Hrs of 05.07.2024 and then subsequently charging 132 kV Kongba - Yaingangpokpi 2 Line, 132 kV New Thoubal - Kakching Linc, 132kV Thoubal New – Kongba 1, 132kV Thoubal New – Kongba 2 and 132kV Thoubal Old – Thoubal New. 132 kV Old Thoubal - Kakching Line is not yet charged.	132 kV New Thoubal - Kakching Line, 132 kV Old Thoubal - Kakching Line, 132 kV Kongba - Yaingangpokpi 1 Line and 132 kV Kongba - Yaingangpokpi 2 Line
3	GD I	Karong area of Manipur Power System	07-07-2024 13:24	07-07-2024 13:52	00:28	0	8	0.00%	0.32%	2951	2478	Karong area of Manipur Power System was connected with rest of NER Grid via 132kV Karong - Kohima line. 132kV Imphal - Karong line was under outage condition since 28.06.2024. At 13:24 Hrs of 07.07.2024, 132kV Karong - Kohima line tripped. Due to tripping of this line, Karong area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in these areas. Power supply was extended to Karong area of Manipur Power System by charging 132 kV Karong - Kohima line at 13:52 Hrs of 07.07.2024.	132 kV Karong - Kohima
4	GD I	Jirania area of Tripura Power System	07-07-2024 16:51	07-07-2024 17:42	00:51	0	4	0.00%	0.16%	2995	2525	Jirania area of Tripura Power System was connected with rest of NER Grid via 132kV Budhjunnagar - Jirania and 132kV Ambasa – Gamaitila– Baramura- Jirania lines. At 16:51 Hrs of 07.07.2024, 132kV Budhjunnagar - Jirania line and 132kV Gamaitila– Baramura - Jirania lines were tripped. Due to tripping of these lines, Jirania and Baramura area of Tripura Power System was isolated from NER Grid and collapsed due to no source available in these areas. However except Jirania area, no load loss or Generation loss observed in Baramura area of Tripura Power System during the event as reported. Power supply was extended to Jirania area of Tripura Power System by charging 132 kV Budhjunnagar - Jirania line at 17:42 Hrs of 07.07.2024.	132kV Budhjunnagar - Jirania line and 132kV Gamaitila– Baramura - Jirania
5	GD I	Rengpang area of Manipur Power System	08-07-2024 10:31	08-07-2024 12:12	01:41	0	3	0.00%	0.12%	3217	2571	Rengpang area of Manipur Power System was connected with rest of NER Grid through 132 kV Loktak-Rengpang line. 132 kV-Jiribam-Rengpang line was under long outage since 18:18 Hrs of 17.11.2023. At 10:31 Hrs of 08-07-2024, 132 kV Loktak-Rengpang line tripped. Due to tripping of this element, Rengpang area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Rengpang area of Manipur Power System by charging 132 kV Loktak-Rengpang line at 12:12 Hrs of 08.07.2024.	132 kV Loktak-Rengpang line
6	GD I	Longnak area of Nagaland Power System	08-07-2024 06:28	08-07-2024 12:04	05:36	0	2	0.00%	0.08%	3404	2391	Longnak area of Nagaland Power System was connected with rest of NER Grid through 132 kV Mokokchung longnak line. At 06:28 Hrs of 08.07.2024, 132 kV Mokokchung-Longnak line tripped. Due to tripping of this line,Longnak area of Nagaland Power System was isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Longnak area of Nagaland Power System by charging 132 kV Mokokchung-Longnak line at 12:04 Hrs of 08.07.2024.	132 kV Mokokchung-Longnak line

Details of Grid Events during the Month of July 2024 in North 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 1or GI 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 I	Longnak area of Nagaland Power System	08-07-2024 01:37	08-07-2024 05:27	03:50	0	8	0.00%	0.30%	3416	2650	Longnak area of Nagaland Power System was connected with rest of NER Grid through 132 kV Mokokchung longnak line. At 01:37 Hrs of 08.07.2024, 132 kV Mokokchung longnak line tripped. Due to tripping of this line,Longnak area of Nagaland Power System was isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Longnak area of Nagaland Power System by charging 132 kV Mokokchung Longnak Line at 05:27 Hrs of 08.07.2024.	132 kV Mokokchung-Longnak line
8	GD I	Pasighat, and Along areas of Arunachal Pradesh Power System	09-07-2024 12:38	09-07-2024 14:45	02:07	0	10	0.00%	0.38%	2963	2655	Pasighat and Along areas of Arunachal Pradesh Power System were connected with rest of NER Power system via 132 kV Roing - Pasighat Line, 132 kV Along-Pasighat line and 132 kV Basar-Along line. At 12:38 Hrs of of 09.07.2024, 132 kV Roing - Pasighat Line, 132 kV Along-Pasighat line and 132 kV Basar-Along line tripped. Due to tripping of these elements, Pasighat and along areas of Arunachal Pradesh Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power is restored to the Pasighat area by charging 132kV Roing-Pasighat line at 14:45 Hrs of 09.07.2024 and is further extended to the along area by charging 132kV Along-Pasighat line at 16:22 Hrs of 09.07.2024.	132 kV Roing - Pasighat Line, 132 kV Along-Pasighat line and 132 kV Basar-Along line
9	GD I	Blackout in Khupi, Tenga areas of Arunachal Pradesh Power System	09-07-2024 13:42	09-07-2024 15:20	01:38	0	23	0.00%	0.89%	3074	2582	Tenga area of Arunachal Pradesh Power System were connected with rest of NER Power system via 132 kV Balipara- Tenga line and Khupi area is connected via 132kV Khupi- Kameng line. Tenga and Khupi area are connected via 132 kV Tenga-Khupi line. At 13:42 Hrs of of 09.07.2024, 132 kV Balipara-Tenga line and 400/132kV 40 MVA ICT at Kameng tripped leading to blackout of Khupi and Tenga area of Arunachal Pradesh Power system. Dikshi generation also tripped due to difference in load and generation. Power was restored to the affected area by charging 132kV Balipara-Tenga line at 15:20 hrs of 09.07.2024.	132 kV Balipara-Tenga line
10	GD I	Rongkhon, Ampati, Phulbari and Ganol HEP of Meghalaya power system	11-07-2024 07:44	11-07-2024 07:55	00:11	0	23	0.00%	1.00%	3159	2305	Rongkhon, Ampati, Phulbari areas and Ganol HEP of Meghalaya Power System were connected to NER Power system via 132 kV Rongkhon - Nangalbibra line. At 07:44 Hrs of 11-07-2024, 132 kV Rongkhon – Nangalbibra Line tripped. Due to tripping of this line, Rongkhon, Ampati, Phulbari areas and Ganol HEP of Meghalaya Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power supply was extended to Rongkhon, Ampati, Phulbari & Ganol areas of Meghalaya Power System by charging 132 kV Nangalbibra –Rongkhon line at 07:55 Hrs of 11-07-2024.	132 kV Rongkhon – Nangalbibra Line
11	GD I	Kokrajhar, Bilasipara, Gauripur areas of Assam Power System	11-07-2024 11:53	11-07-2024 13:01	01:08	0	55	0.00%	2.30%	2887	2393	Kokrajhar, Bilasipara, Gauripur areas of Assam Power System were connected with rest of NER Grid via132 kV BTPS Kokrajhar 2 Line. 132 kV BTPS Kokrajhar 1 Line was under outage. At 11:53 Hrs of 11.07.2024, 132 kV BTPS Kokrajhar 2 Line tripped. Due to tripping of this line, Kokrajhar, Bilasipara, Gauripur areas of Assam Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power was extended to Kokrajhar, Bilasipara, Gauripur areas of Assam Power System by charging 132 kV Gauripur - Gossaigaon 1 line at 12:09 hrs of 11.07.2024.	132 kV BTPS Kokrajhar 2 Line
12	GD I	Rengpang area of Manipur Power System	11-07-2024 09:23	11-07-2024 10:22	00:59	0	1	0.00%	0.04%	2887	2393	Rengpang area of Manipur Power System was connected with rest of NER Grid via 132kV Loktak Rengpang line. 132kV Jiribam-Rengpang line is under long outage. At 09:23 Hrs of 11.07.2024, 132 kV Loktak-Rengpang line tripped. Due to tripping of this line, Rengpang area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in these areas. Power supply was extended to Rengpang area of Manipur Power System by charging 132kV Rengpang-Loktak line at 10:22 Hrs of 11.07.2024.	132 kV Loktak-Rengpang line
13	GD I	Rokhia Generating Station of Tripura Power System	13-07-2024 00:27	13-07-2024 01:14	00:47	17	13	0.53%	0.45%	3197	2901	Rokhia Generating Station of Tripura Power System was connected with rest of NER Grid through 132 kV Rokhia-Agartala 1 line, 132 kV Rokhia-Agartala 2 line and 132kv Rokhia –Monarchak line. At 00:27 Hrs, 132 kV Rokhia-Agartala 1 line, 132 kV Rokhia-Agartala 2 line and 132kV Rokhia – Monarchak line tripped, leading to tripping of Rokhia Unit-7. This lead to blackout of 132kV Rokhia substation causing load loss of 13 MW and generation loss of 17 MW.Due to tripping of 132kV Rokhia – Monarchak line, SPS operated at Monarhak and it tripped Monarchak STG. Power was extended to Rokhia Generating Station of Tripura Power System by charging 132 kV Rokhia-Agartala 1 line at 01:14 Hrs of 14-07-2024.	132 kV Rokhia-Agartala 1 line, 132 kV Rokhia-Agartala 2 line and 132kV Rokhia – Monarchak line

Details of Grid Events during the Month of July 2024 in North 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 1or GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
14	GD II	Upper Assam areas of Assam Power System, AGBPP Generating stations, and Pasighat, Roing, Tezu and Namsai areas of Arunachal Power System	15-07-2024 19:45	15-07-2024 20:37	00:52	0	435	0.00%	13.85%	3434	3140	At 19:45 Hrs of 15.07.2024, 220 kV Mariani(AS)-Samaguri line, 220 kV Mariani(AS)- Mariani(PG) line, 220 kV AGBPP- Mariani(PG) line,132 kV Golaghat- Mariani(AS) line, and 132 kV Along-Pasighat line tripped. Due to tripping of these elements, Upper Assam power system consisting of Mariani(AS), Jorhat(Garmur), Jorhat(west), Bokakhat, Teok Nazira, Lakwa(LTPS), Moran, Sonari, NTPS, Bordubi, Namrup PS-1, Tinsukia, Amguri JACKSON SP, Dibrugarh, Margherita, Rupai, Margherita Chapakowa areas, and Deomali, Pasighat,Roing, Tezu and Namsai areas of Arunachal Power System of NER and AGBPP Generating Stations were isolated from NER Grid and collapsed due to load generation mismatch in these areas. Power was extended to Upper Assam power system consisting of Mariani(AS), Jorhat(Garmur), Jorhat(west), Bokakhat, Teok Nazira, Lakwa(LTPS), Moran, Sonari, NTPS, Bordubi, Namrup PS-1, Tinsukia, Amguri JACKSON SP, Dibrugarh, Margherita, Rupai, Margherita Chapakowa areas by charging 220 kV Mariani(AS)-Samaguri line at 20:37 Hrs and to Pasighat, Roing, Tezu and Namsai areas of Arunachal Power System by charging 132 kV Along Pasighat line at 20:56 Hrs and to Deomali area of Assam Power System by charging 220 kV Mariani(AS)-Samaguri line.	220 kV Mariani(AS)-Samaguri line, 220 kV Mariani(AS)-Mariani(PG) line, 220 kV AGBPP- Mariani(PG) line,132 kV Golaghat- Mariani(AS) line, and 132 kV Along-Pasighat line
15	GD I	Kokrajhar, Bilasipara and Gauripur areas of Assam Power System	15-07-2024 18:10	15-07-2024 21:00	02:50	0	45	0.00%	1.56%	3224	2878	Kokrajhar, Bilasipara and Gauripur areas of Assam Power System were connected with rest of NER Grid via 132 kV BTPS Kokrajhar 1& 2 Line. At 18:10 Hrs of 15.07.2024, 132 kV BTPS Kokrajhar 1 &2 Line tripped. Due to tripping of this line,Kokrajhar, Bilasipara, Gauripur areas of Assam Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power was extended to Kokrajhar, Bilasipara, Gauripur areas of Assam Power System by charging 132 kV BTPS Kokrajhar 2 line at 21:00 Hrs of 15-07-2024.	132 kV BTPS Kokrajhar 1 &2 Line
16	GD I	Doyang Generating station of NEEPCO Power System	16-07-2024 10:08	16-07-2024 11:21	01:13	73	0	3.03%	0.00%	2408	2546	Doyang generating station of Nagaland Power System was connected with rest of NER Grid with 132 kV Dimapur-Doyang 2 and 132 kV Doyang-Mokokchung and 132 kV Doyang-Sanis lines. Prior to the event, 132 kV Dimapur-Doyang I was uner planned shutdown. At 10:08 Hrs of 16-07-2024, 132 kV Dimapur-Doyang 2,132 kV Doyang-Mokokchung and 132 kV Doyang-Sanis lines tripped and subsequently all three units of Doyang tripped leading to generation loss of 73 MW. Power was extended to Doyang Generating Station by charging 132 kV Doyang-Mokokchung line at 11:21 Hrs of 16.07.2024.	132 kV Dimapur-Doyang 2,132 kV Doyang-Mokokchung and 132 kV Doyang-Sanis lines
17	GD I	Kokrajhar, Bilasipara and Gauripur areas of Assam Power System	16-07-2024 12:23	16-07-2024 12:28	00:05	0	64	0.00%	2.40%	2300	2664	Kokrajhar, Bilasipara and Gauripur areas of Assam Power System were connected with rest of NER Grid via 132 kV BTPS Kokrajhar 2 Line. 132 kV BTPS Kokrajhar 1 Line was under outage since 18:10 hrs of 15.07.2024. At 12:23 Hrs of 16.07.2024, while charging 132 kV BTPS Kokrajhar 1 Line, 132 kV BTPS Kokrajhar 1 & 2 Lines tripped. Due to tripping of these lines, Kokrajhar, Bilasipara, Gauripur areas of Assam Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power was extended to Kokrajhar, Bilasipara, Gauripur areas of Assam Power System by charging 132 kV BTPS Kokrajhar 2 line at 12:28 Hrs of 16.07.2024.	132 kV BTPS Kokrajhar 1 & 2 Lines
18	GD I	Rongkhon,Ampati and Ganol area of Meghalaya Power System	17-07-2024 12:29	17-07-2024 12:37	00:08	22.5	24	0.89%	1.00%	2521	2401	Tenga area of Arunachal Pradesh Power System were connected with rest of NER Power system via 132 kV Balipara- Tenga line and Khupi area is connected via 132kV Khupi- Kameng line. Tenga and Khupi area are connected via 132 kV Tenga-Khupi line. At 13:42 Hrs of of 09.07.2024, 132 kV Balipara-Tenga line and 400/132kV 40 MVA ICT at Kameng tripped leading to blackout of Khupi and Tenga area of Arunachal Pradesh Power system. Dikshi generation also tripped due to difference in load and generation.	132 kV Balipara-Tenga line
19	GD I	Ganol HEP of Meghalaya power system	17-07-2024 10:11	17-07-2024 10:16	00:05	15	9	0.56%	0.32%	2702	2805	Ganol HEP of Meghalaya Power System is connected to NER Power system via 132kV Ganol –Rongkhon line. At 10:11 hrs, 132 kV Ganol – Rongkhon line tripped leading to tripping of Ganol HEP. Power was extended to Ganol Generating Station of Meghalaya Power System by charging 132kV Ganol – Rongkhon line at 10:16 Hrs of 17-07-2024.	132 kV Ganol – Rongkhon line

Details of Grid Events during the Month of July 2024 in North 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 1or GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
20	GD I	NEIGRIHMS & IIM Area of Meghalaya Power System	17-07-2024 14:50	17-07-2024 15:15	00:25	0	2	0.00%	0.07%	2643	2965	132 kV IIM S/S of Meghalaya Power System was connected with rest of NER Grid via 132 kV IIM - NEIGRIHMS line At 14:50 hrs of 17.07.2024, 132 kV IIM - NEIGRIHMS line tripped. Due to tripping of this lines, IIM area of Meghalaya Power System was isolated from NER Grid and collapsed due to no source in the area. Subsequently, 132 kV NEIGRIHMS S/S of Meghalaya Power System was connected with rest of NER Grid via 132 kV NEHU -NEIGRIHMS line & 132 kV Khelihriat – NEIGRIHMS. At 14:56 hrs of 17.07.2024, 132 kV NEHU - NEIGRIHMS line & 132 kV Khelihriat – NEIGRIHMS. Due to tripping of these lines, NEIGRIHMS area of Meghalaya Power System was isolated from NER Grid and collapsed due to no source in the area. Power supply was extended to NEIGRIHMS area of Meghalaya Power System by charging 132 kV NEHU - NEIGRIHMS at 15:15 hrs of 17-07-2024. Power supply was extended to IIM area of Meghalaya Power System by charging 132 kV IIM - NEIGRIHMS at 15:34 hrs of 17-07-2024.	132 kV NEHU - NEIGRIHMS, 132 kV Khelihriat – NEIGRIHMS & 132 kV IIM - NEIGRIHMS lines
21	GD I	Umiam Stage 2 of Meghalaya Power System	17-07-2024 15:03	17-07-2024 15:48	00:45	14	0	0.51%	0.00%	2720	2715	Umiam Stage 2 of Meghalaya Power System was connected with rest of NER Grid via 132 kV Umiam Stg 2-Umiam Stg 1 line. At 15:03 Hrs of 17-07-2024, 132 kV Umiam Stg 2-Umiam Stg 1 line tripped. Due to tripping of this line,Umiam Stage 2 of Meghalaya Power System was isolated from NER Grid. Power supply was extended to Umiam Stage 2 of Meghalaya Power System by charging 132kV Umiam Stg 2-Umiam Stg 1 line at 15:48 hrs of 17-07-2024.	132 kV Umiam Stg 2-Umiam Stg 1 line
22	GD I	Khupi, Tenga areas of Arunachal Pradesh Power System	19-07-2024 10:43	19-07-2024 12:51	02:08	20	1	0.82%	0.04%	2432	2801	Khupi area of Arunachal Pradesh Power System were connected with rest of NER Power system via 132 kV Khupi-Tenga line and 132 kV Khupi- Kameng line. Dikshi is connected to NER grid grid via 132 kV Dikshi-Tenga line. At 10:43 Hrs of of 19.07.2024, 132 kV Bus coupler tripped at Kameng leading to under voltage at khupi end. 132kV Tenga- Khupi line tripped and 132kV Kameng- Khupi tripped leading to blackout of Khupi area. 132kV Dikshi-Tenga line tripped leading to Generation loss of Dikshi. Power is restored by charging 132 kV Tenga Khupi line at 12:51 Hrs of 19.07.2024.	132kV Tenga- Khupi & 132kV Kameng- Khupi lines
23	GD I	Deomali Area of Arunachal Pradesh Power system	19-07-2024 11:17	19-07-2024 22:19	11:02	0	1	0.00%	0.03%	2483	2882	Deomali area of Arunachal Pradesh Power System is connected to NER Power system via 220 kV AGBPP-Deomali line. At 11:17 hrs of 19.07.2024, 220 kV AGBPP-Deomali line tripped leading to blackout of Deomali area of Arunachal Pradesh power system. Power was extended to Deomali area by charging 220 kV AGBPP-Deomali line at 22:19 Hrs of 19.07.2024.	220 kV AGBPP-Deomali line
24	GD I	Dhemaji & Silapathar Areas of Assam Power system	19-07-2024 11:19	19-07-2024 11:33	00:14	0	36	0.00%	1.25%	2500	2886	Dhemaji & Silapathar areas of Assam Power System are radially connected to NER Power system via 132 kV North Lakhimpur-Dhemaji line & 132 kV Dhemaji- Silapathar line. At 11:19 hrs of 19.07.2024, 132 kV North Lakhimpur-Dhemaji line tripped leading to blackout of Dhemaji & Silapathar areas of Assam power system. Power was extended to Dhemaji area of Assam power system by charging 132 kV North Lakhimpur-Dhemaji line at 11:33 hrs of 19.07.2024.	132 kV North Lakhimpur-Dhemaji line
25	GD I	Rengpang area of Manipur Power System	20-07-2024 18:05	22-07-2024 19:18	49:13	0	3	0.00%	0.10%	3408	3004	Rengpang area of Manipur Power System was connected with rest of NER Grid through 132 kV Loktak-Rengpang line. 132kV-Jiribam-Rengpang line was under long outage since 18:18 Hrs of 17.11.2023. At 18:05 Hrs of 20-07-2024, 132 kV Loktak-Rengpang line tripped. Due to tripping of this element, Rengpang area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in this area. Power was extended to Rengpang area of Manipur power system by charging 132 kV Loktak-Rengpang line at 19:18 hrs of 22.07.2024.	132 kV Loktak-Rengpang line
26	GD I	Karong area of Manipur Power System of NER	21-07-2024 10:15	21-07-2024 11:36	01:21	0	9	0.00%	0.35%	2496	2564	Karong area of Manipur Power System was connected with rest of NER Grid through 132 kV Karong Kohima Line. 132 kV Yurembam-Karong line was idle charged condition since 17:05 hrs of 20.07.2024. At 10:15 Hrs of 21-07-2024, while closing the breaker at Karong end for 132 kV Yurembam-Karong line, 132 kV Karong-Kohima Line tripped due to tree branches which were is in touch with the Bus isolator as informed. Due to tripping of this element, Karong area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in this area. Power is extended to Karong area of Manipur Power System by charging 132 kV Karong-Kohima Line at 11:36 Hrs of 21.07.2024.	132 kV Karong-Kohima Line

Details of Grid Events during the Month of July 2024 in North 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 1or GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
27	GD I	Kohima area of Nagaland Power System and Karong area of Manipur Power System of NER	21-07-2024 12:19	21-07-2024 12:59	00:40	0	14	0.00%	0.53%	2562	2618	Kohima area of Nagaland Power System and Karong area of Manipur Power System were connected with rest of NER Grid through 132 kV Dimapur(PG)-Kohima Line, 132 kV Kohima – Zhadima Line. 132 kV Yurembam-Karong line was idle charged condition since 11:42 hrs of 21.07.2024. 132kV Kohima – Meluri was under outage since 10:05 Hrs of 27-09-2023 as S/D taken by Kohima trans. Div. for dismantling of Tower no. AP 130. At 12:19 Hrs of 21-07-2024, 132 kV Dimapur(PG)-Kohima Line and 132 kV Kohima – Zhadima Line tripped. Due to tripping of these elements, Kohima area of Nagaland Power System and Karong area of Manipur Power System were isolated from NER Grid and collapse due to no source available in these areas. Power is extended to Kohima area of Nagaland Power System and Karong area of Manipur Power System by charging 132 kV Dimapur(PG)-Kohima Line at 12:59 Hrs of 21.07.2024.	132 kV Dimapur(PG)-Kohima Line and 132 kV Kohima – Zhadima Line
28	GD I	Karong area of Manipur Power System	21-07-2024 10:15	21-07-2024 11:36	01:21	0	9	0.00%	0.35%	2496	2564	Karong area of Manipur Power System is connected with rest of NER Grid through 132 kV Imphal (MSPCL)-Karong and 132 kV Karong-Kohima lines. Prior to the event, 132 kV Imphal(MSPCL)-Karong line was under idle charged condition since 17:05 Hrs of 20.07.2024. At 10:15 Hrs of 21.07.2024, while closing the breaker at Karong end for 132 kV Imphal(MSPCL)-Karong line, 132 kV Karong-Kohima Line tripped due to tree branches which came in touch with the Bus isolator as informed by MSPCL. Due to tripping of this line, Karong area of Manipur Power System got isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Karong area of Manipur Power System by charging 132 kV Karong-Kohima Line at 11:36 Hrs of 21.07.2024.	132 kV Karong-Kohima Line
29	GD I	Kohima area of Nagaland & Karong area of Manipur power system	21-07-2024 12:19	21-07-2024 12:59	00:40	0	24	0.00%	0.92%	2562	2618	Kohima area of Nagaland and Karong area of Manipur Power System are connected with rest of NER Grid through 132 kV Imphal (MSPCL)-Karong, 132 kV Dimapur-Kohima & 132 kV Kohima-Zhadima lines. Prior to the event, 132 kV Yurembam-Karong line was under idle charged condition since 11:42 Hrs of 21.07.2024; 132 kV Kohima – Meluri line was under outage since 10:05 Hrs of 27-09-2023 as S/D was taken by Kohima trans. Div. for dismantling of Tower no. AP 130. At 12:19 Hrs of 21.07.2024, 132 kV Dimapur-Kohima & 132 kV Kohima-Zadima lines tripped. Due to tripping of these lines, Kohima and Karong areas got isolated from NER Grid and collapsed due to no source available in these areas. Power supply was extended to Kohima area of Nagaland & Karong area of Manipur Power System by charging 132 kV Dimapur-Kohima Line at 12:59 Hrs of 21.07.2024.	132 kV Dimapur-Kohima & 132 kV Kohima-Zadima lines
30	GD I	Pasighat area of Arunachal Power System	26-07-2024 10:50	26-07-2024 11:17	00:27	0	2	0.00%	0.07%	2444	2894	Pasighat area of Arunachal Pradesh Power System was connected with rest of NER Power system via 132 kV Along – Pasighat & 132 kV Roing-Pasighat lines. Prior to the event, 132 kV Roing-Pasighat line tripped at 10:42 Hrs of 26.07.2024. At 10:50 Hrs of 26.07.2024, 132 kV Along - Pasighat Line tripped. Due to tripping of these elements, Pasighat area of Arunachal Pradesh Power System got isolated from NER Grid and collapsed due to no source available in this area. Power is restored at Pasighat area by charging 132 kV Along-Pasighat line at 11:17 Hrs of 26-07-2024.	132 kV Along - Pasighat Line
31	GD I	Udaipur area of Tripura Power System	26-07-2024 11:25	26-07-2024 12:10	00:45	0	25	0.00%	0.87%	2471	2873	Udaipur area of Tripura Power System is connected with rest of NER Grid through 132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines. At 11:25 Hrs of 26.07.2024, 132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines tripped. Due to tripping of these lines, Udaipur area of Tripura Power System got isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Udaipur area of Tripura Power System by charging 132 kV Palatana-Udaipur line at 12:10 Hrs of 26.07.2024.	132 kV Palatana-Udaipur & 132 kV Monarchak-Udaipur lines
32	GD I	Rengpang area of Manipur Power System	27-07-2024 08:23	28-07-2024 15:07	30:44	0	1	0.00%	0.04%	2592	2758	Rengpang area of Manipur Power System was connected with rest of NER Grid through 132 kV Loktak – Rengpang line. 132 kV Jiribam-Rengpang line was under outage since 18:18 Hrs of 17.11.2023. At 08:23 Hrs of 27-07-2024, 132 kV Loktak – Rengpang line tripped. Due to tripping of this element, Rengpang area of Manipur Power System was isolated from NER Grid and collapsed due to no source available this area. Power supply was extended to Rengpang area of Manipur Power System by charging 132 kV Loktak – Rengpang line at 15:07 Hrs on 28-07-2024.	132 kV Loktak – Rengpang line
33	GD I	Tuirial generating station of NEEPCO power system	27-07-2024 19:45	27-07-2024 19:51	00:06	55	0	1.57%	0.00%	3514	3757	Tuirial generating station of NEEPCO Power System was connected with rest of NER Grid through 132 kV Tuirial-Kolasib Line. At 19:45 Hrs of 27-07-2024, 132 kV Tuirial-Kolasib line tripped. Due to tripping of this element, Tuirial generating station of NEEPCO got isolated from NER Grid and collapsed due to loss of evacuation path. Power supply was extended to Tuirial S/S by charging 132 kV Tuirial-Kolasib line at 19:51 Hrs on 27-07-2024.	132 kV Tuirial-Kolasib line

Details of Grid Events during the Month of July 2024 in North 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 1or GI 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
34	GD I	Nongstoin area of Meghalaya power system	30-07-2024 15:45	30-07-2024 16:06	00:21	0	8	0.00%	0.30%	2500	2657	Nongstoin area of Meghalaya power system is connected with rest of NER grid through 132 kV Nongstoin-Mawngap & 132 kV Nangalbibra-Nongstoin lines. At 15:45 Hrs of 30.07.2024, 132 kV Nongstoin-Mawngap & 132 kV Nangalbibra-Nongstoin lines tripped. Due to tripping of these elements, Nongstoin area of Meghalaya power system got seperated from NER grid and collapsed due to no source available in this area. Power was extended to Nongstoin area of Meghalaya power system by charging 132 kV Nongstoin-Mawngap line at 16:06 Hrs of 30.07.2024.	132 kV Nongstoin-Mawngap & 132 kV Nangalbibra-Nongstoin lines
35	GD I	Karong area of Manipur Power System	31-07-2024 12:04	31-07-2024 12:37	00:33	0	6	0.00%	0.21%	2535	2816	Karong area of Manipur Power System was connected with rest of NER Grid through 132 kV Karong Kohima Line. 132 kV Yurembam-Karong line was under outage condition since 03:50 hrs of 30.07.2024. At 12:04 Hrs of 31-07-2024, 132 kV Karong-Kohima Line tripped. Due to tripping of this element, Karong area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Karong area of Manipur Power System by charging 132 kV Karong-Kohima Line at 12:37 Hrs of 31.07.2024.	132 kV Karong-Kohima Line