

Details of Grid Events during the Month of May 2022 in Northern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (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-May-2022 17:34	01-May-2022 18:40	1:06	0	0	0.000	0.000	46435	55421	As reported at 17:34 Hrs, 400 KV Agra(PG)-Agra(UP) (PG) Ckt-1 tripped on B-N fault followed by tripping of 400 KV Agra(PG)-Agra Fatehabad(UP) (PG) Ckt-1 on R-N fault. Further after 1min at 17:35 Hrs, 765 KV Agra-Ihatikara (PG) Ckt-1 tripped on Y-N fault. Later at 17:51 Hrs, 400 KV Agra Fatehabad-Agra South (UP) Ckt-1 tripped on B-N fault followed by tripping of 765 KV Agra Fatehabad(UP)-G.Noida_2(UP) (GT1) Ckt-1 at 17:55 Hrs on B-N fault. Multiple faults occurred due to thunderstorm / inclement weather condition. As per PMU, R-N & B-N fault at 17:34 Hrs, Y-N fault with unsuccessful A/R operation at 17:35 Hrs B-N fault at 17:51 Hrs and R-N fault with unsuccessful A/R operation at 17:55 Hrs is observed. In antecedent condition, 400 KV Agra(PG)-Agra(UP) (PG) Ckt-1, 400 KV Agra(PG)-Agra Fatehabad(UP) (PG) Ckt-1, 765 KV Agra-Ihatikara (PG) Ckt-1 were carrying 5MW, 24MW & 741MW respectively.	1) 400 KV Agra(PG)-Agra(UP) (PG) Ckt-1 2) 400 KV Agra(PG)-Agra Fatehabad(UP) (PG) Ckt-1 3) 765 KV Agra-Ihatikara (PG) Ckt-1
2	GI-2	HARYANA	01-May-2022 19:34	01-May-2022 21:34	2:00	0	0	0.000	0.000	45296	54640	As reported, 800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-1 tripped on DC line fault. At the same time, 800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-2 & Ckt-4 both tripped on common longitudinal differential protection operation during thunderstorm / inclement weather condition. As per PMU, no fault is observed. In antecedent condition, 800 KV HVDC Kurukshetra(PG)-Champa(PG) Bipole-1 & Bipole-2 were carrying total 3000MW.	1) 800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-4 2) 800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-1 3) 800 KV HVDC Kurukshetra(PG)-Champa(PG) (PG) Ckt-2
3	GD-1	RAJASTHAN	02-May-2022 11:06	02-May-2022 11:39	0:33	1300	0	2.422	0.000	53679	58291	As reported at 11:06 Hrs, 400/220 kv 500 MVA ICT 1 & ICT 2 at Adani RenewPark_SL_FGARH_FBTL (AREPR) tripped on thermal over loading protection operation. With the tripping of both the ICTs which were carrying approx. 890MW total, sudden over voltage occurred. On this over-voltage, 765 KV Bikaner-Bhadla_2 (PG) Ckt-1, 765 KV Ajmer-Bhadla_2 (PG) Ckt-1, 765 KV Bhadla_2 (PG)-Fatehgarh_JI(PG) (PFTL) Ckt-1, 765 KV Fatehgarh_JI(PG)-Bhadla(PG) (FBTL) Ckt-1, 220/33 kv 100 MVA ICT 1 at Mahindra_SL_BHD_PG (MAHINDRA) and 220KV Bhadla-Azure Mapple ckt tripped. At the same time, 220 KV AzurePSS41_SL_BHD_PG (APFOL)-Bhadla(PG) (Azure) Ckt-1 tripped on under voltage protection operation. During same time, tripping of incoming feeders observed at AVANA Solar. As per PMU plot of voltage at Fatehgarh2, over voltage is observed (voltage rose from 739kV to 825kV). As per SCADA, sudden drop of approx. 1860MW solar generation is observed, out of which around 600MW solar generation recovered within 2 min. In antecedent condition, 400/220 kv 500 MVA ICT 1 & ICT 2 at Adani RenewPark_SL_FGARH_FBTL (AREPR), 220/33 kv 100 MVA ICT 1 at Mahindra_SL_BHD_PG (MAHINDRA), 220 KV AzurePSS41_SL_BHD_PG (APFOL)-Bhadla(PG) (Azure) Ckt-1 and 220KV Bhadla-Azure Mapple ckt were carrying 444MW, 444MW, 73MW, 128MW & 58MW respectively.	1) 400/220 kv 500 MVA ICT 2 at Adani RenewPark_SL_FGARH_FBTL (AREPR) 2) 765 KV Bikaner-Bhadla_2 (PG) Ckt-1 3) 765 KV Ajmer-Bhadla_2 (PG) Ckt-1 4) 765 KV Bhadla_2 (PG)-Fatehgarh_JI(PG) (PFTL) Ckt-1 5) 220 KV AzurePSS41_SL_BHD_PG (APFOL)-Bhadla(PG) (Azure) Ckt-1 6) 220/33 kv 100 MVA ICT 1 at Mahindra_SL_BHD_PG (MAHINDRA) 7) 765 KV Fatehgarh_JI(PG)-Bhadla(PG) (FBTL) Ckt-1 8) 400/220 kv 500 MVA ICT 1 at Adani RenewPark_SL_FGARH_FBTL (AREPR)
4	GD-1	RAJASTHAN	02-May-2022 11:23	02-May-2022 15:20	3:57	420	0	0.788	0.000	53288	57747	As reported at 11:23 Hrs, 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-1 tripped on Y-N phase to earth fault after unsuccessful A/R operation, fault distance and fault current was 20km & 6.6kA from Bhinmal end. At the same time, 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-2 also tripped. As reported by POWERGRID, 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-2 tripped on OT received at their end. During same time, loss in wind generation of approx. 420MW occurred which recovered after approx. 17min. As per PMU, Y-N phase to earth fault with unsuccessful A/R operation is observed. As per SCADA, loss in Rajasthan wind generation of approx. 420MW is observed. In antecedent condition, 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-1 & Ckt-2 were carrying approx. 577MW each.	1) 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-1 2) 400 KV Bhinmal(PG)-Barmer(RS) (RS) Ckt-2
5	GD-1	RAJASTHAN	02-May-2022 11:58	02-May-2022 12:50	0:52	240	0	0.442	0.000	54310	59114	As reported, 220/33 kv 100 MVA ICT 1, ICT 2 & ICT 3 at Mahindra_SL_BHD_PG (MAHINDRA) tripped on over voltage protection operation. As per PMU, voltage of 220KV Bhadla-Mahindra_SL_BHD_PG ckt was 211kV during antecedent condition which shows that over voltage was not there. As per SCADA, drop in solar generation of approx. 240MW is observed. In antecedent condition, 220/33 kv 100 MVA ICT 1, ICT 2 & ICT 3 at Mahindra_SL_BHD_PG (MAHINDRA) were carrying approx. 73MW, 95MW & 73MW respectively.	1) 220/33 kv 100 MVA ICT 2 at Mahindra_SL_BHD_PG (MAHINDRA) 2) 220/33 kv 100 MVA ICT 3 at Mahindra_SL_BHD_PG (MAHINDRA)
6	GD-1	J & K	04-May-2022 12:49	04-May-2022 13:51	1:02	0	75	0.000	0.125	52396	59974	As reported at 12:48 Hrs, 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 & Ckt-2 and 220 KV Sama(PG)-Udhampur(PDD) (PDD) Ckt-1 tripped on B-N phase to earth fault. As per PMU B-N phase to earth fault is observed. As per SCADA SOE, it seems that 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 successfully autoreclosed from Kishenpur end. As per SCADA, change in load of approx. 75MW is observed. In antecedent condition, 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 & Ckt-2 were carrying 70MW each.	1) 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-2 2) 220 KV Kishenpur(PG)-Udhampur(PDD) (PG) Ckt-1 3) 220 KV Sama(PG)-Udhampur(PDD) (PDD) Ckt-1
7	GD-1	UTTAR PRADESH	05-May-2022 00:35	05-May-2022 01:35	1:00	0	19	0.000	0.040	41361	48071	As reported at 00:35 Hrs, B-N phase to earth fault occurred on 220KV Muzaffarnagar-Charla ckt in Z-1 with distance of 33km from Muzaffarnagar end. As CB of this line didn't open, fault kept persisting and later this CB got damage. Further after 3 sec, 400/220 kv 315 MVA ICT 1 & ICT 2 at Muzaffarnagar(UP) tripped on backup O/C, E/F protection operation. Further after 2sec, 220KV Muzaffarnagar-Shamli ckt and 220KV Muzaffarnagar-Jansath ckt tripped on SPS operation. Further after 300ms, 400/220 kv 315 MVA ICT 3 at Muzaffarnagar(UP) also tripped. At the same time, 220KV Muzaffarnagar-Modipuram ckt was hand tripped 132kV line to Furqat, Jolly Road and Jansath also tripped during same time. As per PMU, B-N phase to earth fault with delayed clearance in 5120ms is observed. As reported by SLDC-UP, load loss of around 19MW occurred during the event. In antecedent condition, 400/220 kv 315 MVA ICT 1, ICT 2 & ICT 3 at Muzaffarnagar(UP) were carrying 62MW, 69MW & 67MW respectively.	1) 400/220 kv 315 MVA ICT 3 at Muzaffarnagar(UP) 2) 400/220 kv 315 MVA ICT 1 at Muzaffarnagar(UP) 3) 400/220 kv 315 MVA ICT 2 at Muzaffarnagar(UP)
8	GI-2	HIMACHAL PRADESH	05-May-2022 11:43	05-May-2022 12:54	1:11	0	0	0.000	0.000	48723	53928	As reported, 220kV bus bar at Wangtoo_GIS tripped on gas low level-2 alarm of G1 compartment (i.e. Bus Isolator compartment) of Bay-201, which led to tripping of 400/220 kv 315 MVA ICT 1 & ICT 2, 220/66kV 200MVA Transformer-1 & 2 at Wangtoo_GIS(HR), 220KV Wangtoo-Kashnag ckt, 220KV Wangtoo-Bhoktoo ckt and 220KV Wangtoo-Bhabha-Kunihar ckt. On inspection terminals of gas level-2 in the density switch of Bay-201 was found loose. As per PMU, no fault is observed.	1) 400/220 kv 315 MVA ICT 2 at Wangtoo_GIS(HR) 2) 400/220 kv 315 MVA ICT 1 at Wangtoo_GIS(HR)
9	GD-1	HIMACHAL PRADESH ; PUNJAB	06-May-2022 19:54	06-May-2022 20:10	0:16	380	0	0.768	0.000	49491	59152	As reported at 19:54 Hrs, busbar protection of 400kV Bus-1 at Chamba operated during testing of 400kV Bus-2 at Chamba which resulted into tripping of 400/220 kv 315 MVA ICT 1 & ICT 2 at Chamba(PG), 400 KV Chamba-Jalandhar (PG) Ckt-1 & Ckt-3, 400 KV Chamera_2(NH)-Chamba(PG) (PG) Ckt-1 and 80 MVAR Bus Reactor No 1 at 400KV Chamba(PG). With the tripping of above elements, all three 77MW unit of Chamera III tripped on loss of evacuation path. Due to loss of evacuation path, Budhil and Lahal station also became dead. As per PMU, no fault is observed. As per SCADA, loss in generation of approx. 380MW (233MW at Chamera III, 70MW at Budhil & 77MW at Lahal) is observed. In antecedent condition, 400 KV Chamba-Jalandhar (PG) Ckt-1 & Ckt-2 were carrying 253MW & 25MW respectively.	1) 80 MVAR Bus Reactor No 1 at 400KV Chamba(PG) 2) 400/220 kv 315 MVA ICT 1 at Chamba(PG) 3) 400/220 kv 315 MVA ICT 2 at Chamba(PG) 4) 400 KV Chamba-Jalandhar (PG) Ckt-1 5) 400 KV Chamera_2(NH)-Chamba(PG) (PG) Ckt-2 6) 400 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 7) 400KV Bus 1 at Chamba(PG)

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
10	GD-1	HARYANA	10-May-2022 16:09	10-May-2022 17:15	1:06	0	700	0.000	1.124	51469	62265	As reported at 16:09 Hrs, Bus fault occurred due to bursting of Y-Ph CT of 220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 at Hissar IA end. During same time, bus bar protection at Hissar_BB operated which resulted into tripping of all 220KV lines i.e. 220 KV Hissar(BB)-Chirowa(RS) (BB) Ckt-1, 220 KV Hissar(BB)-Jindal Steel(HR) (HVPNL) Ckt-1, 220 KV Hissar-Sangur (BB) Ckt-1 & Ckt-2, 220 KV Bhiwani-Hissar (BB) Ckt-2, 220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 & Ckt-2. At the same time, 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1 & Ckt-2 also tripped from Hissar IA end and 220KV Hissar IA-Masudpur ckt-1 & Ckt-2, 220KV Hissar IA-Narwana ckt-1 tripped from remote end only. As per PMU, Y-N fault which later converted into three phase fault with delayed clearance in 840ms is observed. As per SCADA, change in load of approx. 700MW in Haryana control area is observed. In antecedent condition, 220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 & Ckt-2, 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1 & Ckt-2 were carrying 144MW, 119MW, 101MW & 110MW respectively.	1) 220 KV Hissar(BB)-Chirowa(RS) (BB) Ckt-1 2) 220 KV Hissar(BB)-Jindal Steel(HR) (HVPNL) Ckt-1 3) 220 KV Hissar-Sangur (BB) Ckt-2 4) 220KV Bus 2 at Hissar(BB), 220 KV Bhiwani-Hissar (BB) Ckt-2 5) 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-2 6) 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1 & Ckt-2 7) 220 KV Hissar(BB)-Hissar IA(HV) (BBMB) Ckt-2 8) 220 KV Bhiwani-Hissar (BB) Ckt-1 9) 220 KV Hissar(BB)-Hissar IA(HV) (HVPNL) Ckt-1 10) 220 KV Hissar(PG)-Hissar IA(HV) (PG) Ckt-1
11	GD-1	J & K	11-May-2022 19:56	11-May-2022 21:08	1:12	720	0	1.417	0.000	50816	64406	As reported, 130 MW Dulhasti HPS - UNIT 1, UNIT 2 & UNIT 3 all tripped on negative phase sequence current protection operation. At the same time, 110 MW Kishenganga - UNIT 1, UNIT 2 & UNIT 3 also tripped GT over current protection relay (P141) operation. As per PMU plot of phase voltage at Kishenpur(PG), no fault is observed, however fluctuation in voltage is observed. And as per PMU plot of negative sequence current of 400KV Kishenpur-Dulhasti Ckt-1, negative sequence current existed for around 12 sec and maximum negative sequence current was approx. 7KA. As per SCADA, loss in generation of approx. 335MW at Kishenganga HEP and 385MW at Dulhasti HEP is observed. As per SOE, first Units of Kishenganga tripped followed by tripping of Units of Dulhasti HEP.	1) 110 MW Kishenganga - UNIT 3 2) 130 MW Dulhasti HPS - UNIT 2 3) 110 MW Kishenganga - UNIT 1 4) 130 MW Dulhasti HPS - UNIT 3 5) 130 MW Dulhasti HPS - UNIT 1 6) 110 MW Kishenganga - UNIT 2
12	GD-1	UTTAR PRADESH	14-May-2022 11:34	14-May-2022 12:53	1:19	428	0	0.757	0.000	56576	66072	As reported at 11:34 Hrs, air of CB of 200MW Unit-9 leaked and CB went under lockout condition. Further after approx. 25sec LBB of 200MW Unit-9 at Obra_BUP) (connected to 400KV Bus-1) operated on stator earth fault. 400KV Bus 1 at Obra_BUP) along with the elements 400 KV Obra_B-Sultanpur (UP) Ckt-1, 400/220 KV 315 MVA ICT 1 at Obra_B,UP), 200 MW Obra TPS - UNIT 9, UNIT 10 and UNIT 12 which were connected to 400KV Bus1 tripped on LBB operation. As per PMU, no fault is observed. As per SCADA, loss in generation of approx. 428MW is observed at Obra_B,UP). In antecedent condition, 400 KV Obra_B-Sultanpur (UP) Ckt-1 and 400/220 KV 315 MVA ICT 1 at Obra_B,UP) were carrying 158MW & 370MW respectively.	1) 400/220 KV 315 MVA ICT 1 at Obra_B,UP) 2) 200 MW Obra TPS - UNIT 9 3) 200 MW Obra TPS - UNIT 1 4) 200 MW Obra TPS - UNIT 12 5) 400 KV Obra_B-Sultanpur (UP) Ckt-1 6) 400KV Bus 1 at Obra_B,UP)
13	GD-1	HIMACHAL PRADESH	15-May-2022 20:14	15-May-2022 21:48	1:34	1500	0	2.957	0.000	50725	63283	As reported, 400 KV Nathpa-Jhaki(SJ)-Rampur HEP(SJ) (PG) Ckt-2 tripped on Y-N fault. Further after approx. 3min, 400KV Nathpa Jhaki(SJ)-Panchkula(PG) (PG) Ckt-1 also tripped on R-B phase to phase fault. With the tripping of both these lines Case 2 of SPS of Nathpa Jhaki, Rampur, Karcham HEP generation complex operated which led to tripping of 250 MW Karcham Wangtoo HPS - UNIT 2 & UNIT 4, 68.67MW Rampur HPS UNIT 4 & UNIT 5 and 250 MW Nathpa-Jhaki HPS - UNIT 3 & UNIT 5. Further after approx. 3min, 250 MW Nathpa-Jhaki HPS - UNIT 6 also tripped on stator overload protection operation, which further tripped 68.67MW Rampur HPS UNIT 3 because they were running in Tandem Operation (TOS). As per PMU, Y-N fault with delayed clearance in 760ms followed by R-B phase to phase fault is observed. As per SCADA, loss in generation of approx. 1500MW is observed due to tripping of 3*250MW Unit at N.Jhaki HEP, 2*68.67MW Unit at Rampur HPS and 2*250MW unit at Karcham Wangtoo HPS. In antecedent condition, 400 KV Nathpa Jhaki(SJ)-Rampur HEP(SJ) (PG) Ckt-2 and 400KV Nathpa Jhaki(SJ)-Panchkula(PG) (PG) Ckt-1 were carrying 346MW & 611MW respectively.	1) 400 KV Nathpa Jhaki(SJ)-Rampur HEP(SJ) (PG) Ckt-2 2) 250 MW Karcham Wangtoo HPS - UNIT 4 3) 250 MW Karcham Wangtoo HPS - UNIT 2 4) 400 KV Nathpa Jhaki(SJ)-Panchkula(PG) (PG) Ckt-1 5) 68.67 MW Rampur HEP - UNIT 4 6) 250 MW Nathpa-Jhaki HPS - UNIT 5 7) 250 MW Nathpa-Jhaki HPS - UNIT 3 8) 68.67 MW Rampur HEP - UNIT 5 9) 68.67 MW Rampur HEP - UNIT 3 10) 250 MW Nathpa-Jhaki HPS - UNIT 6
14	GI-2	HARYANA	16-May-2022 00:40	16-May-2022 02:50	2:10	0	0	0.000	0.000	50307	65135	As reported, 400/220 KV 315 MVA ICT 1 at Fatehabad(PG) tripped due to external flash over on 220 KV side dropper of ICT. At the same time, 220 KV Fatehabad(PG)-Sirsah(HV) (HVPNL) Ckt-1 also tripped from Fatehabad end. As per PMU, B-N phase to earth fault is observed. In antecedent condition, 400/220 KV 315 MVA ICT 1 at Fatehabad(PG) and 220 KV Fatehabad(PG)-Sirsah(HV) (HVPNL) Ckt-1 were carrying 82MW & 83MW respectively.	1) 220 KV Fatehabad(PG)-Sirsah(HV) (HVPNL) Ckt-1 2) 400/220 KV 315 MVA ICT 1 at Fatehabad(PG)
15	GD-1	HIMACHAL PRADESH	16-May-2022 16:26	19-May-2022 13:56	21:30	140	0	0.257	0.000	54555	63100	As reported, 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 and 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt-1 tripped on Y-B phase to phase fault. At the same time, 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1 also tripped on R-N phase to earth fault. Fault distance was 48.2km and fault current was 1.3kA from AD Hydro end. Faults occurred during thunderstorm/inclement weather condition. As per PMU, Y-B double phase to earth fault is observed. As per SCADA, loss in generation of approx. 140MW is observed at AD Hydro HEP. In antecedent condition, 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 and 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1 and 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt-1 were carrying 49MW, 88MW and 62MW respectively.	1) 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 2) 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1 3) 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt-1
16	GD-1	HIMACHAL PRADESH	19-May-2022 21:59	20-May-2022 01:01	3:02	400	0	0.799	0.000	50088	65708	As reported, 220 KV Chamera_3(NH)-Budhil(LB) (LB) Ckt-1 tripped on Y-N phase to earth fault, fault distance was 14.8km (Z-2) from Chamera_3 end, fault occurred during inclement weather condition. At the same time, 400/220 KV 315 MVA ICT 1 & ICT 2 at Chamba(PG) tripped on differential protection operation. As per information received from CPC-2, there was some configuration issue at LV side(33kV, tertiary winding) in both the ICTs, which led to differential protection operation. Issue with the configuration has been resolved. With the tripping of ICTs, 77MW UNIT-1,2 & 3 at Chamera-III tripped on loss of evacuation path. Due to tripping of all three units of Chamera_3, 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 & Ckt-2 de-energized. As per PMU, Y-N phase to earth fault is observed which cleared within 80ms. As per SCADA, loss in generation of approx. 217MW at Chamera_3, 355MW at Budhil and 146MW off Lahal is observed. In antecedent condition, 220 KV Chamera_3(NH)-Budhil(LB) (LB) Ckt-1 and 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 & Ckt-2 were carrying 181MW, 200MW & 199MW respectively.	1) 400/220 KV 315 MVA ICT 2 at Chamba(PG) 2) 220 KV Chamba(PG)-Karian(HP) (HPSBE) Ckt-1 3) 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-1 4) 220 KV Chamera_3(NH)-Chamba(PG) (PG) Ckt-2 5) 220 KV Chamera_3(NH)-Budhil(LB) (LB) Ckt-1 6) 400/220 KV 315 MVA ICT 1 at Chamba(PG)
17	GD-1	UTTAR PRADESH	20-May-2022 00:27	20-May-2022 02:28	2:01	0	500	0.000	0.770	49283	64903	As reported, 400/220 KV 315 MVA ICT 2 at Panki(UP), 220 KV Kanpur(PG)-Panki(UP) (PG) Ckt-1, 220/33KV, 60MVA ICT-1 at Panki, 220/132KV, 160MVA ICT-2, ICT-3 & ICT-4 at Panki and 220KV Panki-kanpur South(UP) ckt all tripped on blast of Y-ph CT of 220/132KV, 160MVA ICT-2 at Panki. At the same time, 400/220 KV 315 MVA ICT 2 at Panki(UP) was hand tripped due to safety reason. As per PMU, Y-N phase to earth fault which later converted into three phase fault with delayed clearance in 15sec. 780ms is observed. As per SCADA, change in load of approx. 500MW is observed in UP control area. In antecedent condition, 400/220 KV 315 MVA ICT-1 & ICT 2 at Panki(UP) and 220/132KV, 160MVA ICT-2, ICT-3 & ICT-4 at Panki were carrying 179MW, 184MW, 106MW, 99MW & 91MW respectively.	1) 400/220 KV 315 MVA ICT 2 at Panki(UP) 2) 220 KV Kanpur(PG)-Panki(UP) (PG) Ckt-1

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
18	GD-1	RAJASTHAN	20-May-2022 12:31	20-May-2022 12:50	0:19	3014	0	5.239	0.000	57526	67253	1. Triggering event was the B-N phase to earth fault on 765KV Bhadla-Bikaner(PG) ckt-1 at 12:31:03:800 Hrs. Fault current and fault distance was 5.38kA & 169km (100%) from Bhadla(PG) end. As reported, 8-ph conductor of heva zebra span from dead end tower to gantry at Bikaner end found broken. As per PMU, R-N fault cleared within 80ms. 2. During the fault, voltage at RE stations reduced to 0.53pu-0.65pu and MW drop observed on LVRT operation. However, different RE station showed different behavior during the event which is not inline with the standard LVRT operation. 3. During the event, total solar generation reduction of approx. 3034MW is observed (as per SCADA) which led to drop in frequency from 50.03Hz to 49.72Hz, drop of approx. 0.3Hz. 4. Power drop at most of RE stations led to sudden voltage rise (As per PMU at Fatehgarh2 end, voltage of 765KV Bhadla-Fatehgarh2 ckt-1 rose up to 816-821KV from 755KV). 5. Further after approx. 5secs & 10secs, 765KV Bhadla2-Fatehgarh2 ckt-1 & 765KV Fatehgarh2-Bhadla ckt-1 tripped on over voltage respectively. 6. With the tripping of aforementioned 765KV lines, MW loading of 765KV Bikaner-Bhadla ckt-2 increased to 2034MW at around 12:34 Hrs and MW loading of 765KV Fatehgarh2-Bhadla2 ckt-2 increased to 1079MW at around 12:34 Hrs. 7. As per PMU, oscillations in grid also observed at around 12:33 hrs, which might have initiated due to over loading of 765KV Fatehgarh2-Bhadla2 ckt-2 (186km) & 765KV Bikaner-Bhadla ckt-2 (169km).	1) 765 KV Bhadla_2 (PG)-Fatehgarh_II(PG) (PFTL) Ckt-1 2) 765 KV Bhadla-Bikaner (PG) Ckt-1 3) 220 KV Bhadla(PG)-AzareMaplePSS SL_BHD_PG (APMPL) (APMPL) Ckt-1 4) 765 KV Fatehgarh_II(PG)-Bhadla(PG) (FTL) Ckt-1
19	GD-1	HARYANA	20-May-2022 18:38	20-May-2022 20:29	1:51	0	338	0.000	0.550	48916	61444	At 18:38Hrs, 220 kV Daulatabad-Majra ckt-1, 220 kV Daulatabad- Sector 95 ckt-1 & 2, 400/220 kV 315 MVA ICT 1, ICT 2, ICT 3 & ICT 4 at Daulatabad(HV) all tripped on 220kV Bus-2 bus bar protection operation. Fault occurred due to broken earth wire of 220 kV Daulatabad- Sector 95 ckt-1. As per PMU, Y-N fault with delayed clearance in 360ms followed by R-N & Y-N fault is observed. As per SCADA, change in load of approx. 338MW is observed in Haryana control area. In antecedent condition, 400/220 kV 315 MVA ICT 1, ICT 2, ICT 3 & ICT 4 at Daulatabad(HV) were carrying approx. 103MW each.	1) 400/220 kV 315 MVA ICT 4 at Daulatabad(HV) 2) 400/220 kV 315 MVA ICT 2 at Daulatabad(HV) 3) 400/220 kV 315 MVA ICT 3 at Daulatabad(HV)
20	GD-1	UTTAR PRADESH	20-May-2022 22:46	20-May-2022 23:40	0:54	0	750	0.000	1.149	50684	65282	1. As per information received from Executive Engineer (T&C) Gr. Noida, R-N fault occurred on 220kV Gr. Noida-RC Green ckt-1. 2. Auto Recloser attempt was taken by circuit breaker and got unsuccessful due to persistent fault. 3. After this, 3 phase tripping command did not issue by relay. 4. Due to this all ICTs at 400kV Gr. Noida tripped on E/F protection. As per PMU, R-B double phase to earth fault with delayed clearance in 1200ms is observed. As per SCADA, change in load of approx. 750MW observed 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) 400/220 kV 500 MVA ICT 5 at Gr. Noida(UPC) 4) 400/220 kV 500 MVA ICT 6 at Gr. Noida(UPC)
21	GD-1	HARYANA	21-May-2022 00:45	21-May-2022 03:40	2:55	0	80	0.000	0.127	46543	62905	As reported by BBMB 220 kV Bhiwani(HV)-Bhiwani(BB) (HVPNL) Ckt-2 tripped on R-Phase to ground fault (21.769 m but no trip signal or fault was observed at Bhiwani HVPNL end. Tripping of ICT 400/220 kV 500 MVA ICT (Relay: Trip Relay 86B, 86BX, Buch Relay30AT (A ph Buch optd)) at Bhiwani(BBMB).	1) 220 kV Bhiwani(HV)-Bhiwani(BB) (HVPNL) Ckt-2 2) 400/220 kV 500 MVA ICT 1 at Bhiwani(BB)
22	GI-2	UTTAR PRADESH	21-May-2022 15:49	21-May-2022 17:12	1:23	0	0	0.000	0.000	52107	65832	As per constituent detail 400 kV Gr. Noida_2(UPC)-Noida Sec 148 (UP) Ckt-1 tripped on Phase-Ground (B-Ph) 400 kV Noida Sec 148-Noida Sec 123 (UP) Ckt-2 B-N fault.	1) 400 kV Gr. Noida_2(UPC)-Noida Sec 148 (UP) Ckt-1 2) 400 kV Noida Sec 148-Noida Sec 123 (UP) Ckt-2
23	GD-1	UTTAR PRADESH	21-May-2022 17:31	21-May-2022 18:30	0:59	0	30	0.000	0.053	45317	57102	As informed by SLDC at the time of incident weather condition was stormy and as per information by concerned it is suspected that cable came in the range of both buses due to which Bus Bar Protection of both the buses operated and all elements at 220kV side tripped.	1) 400/220 kV 315 MVA ICT 1 at Muzaffarnagar(UP) 2) 400/220 kV 500 MVA ICT 4 at Muzaffarnagar(UP) 3) 400/220 kV 315 MVA ICT 3 at Muzaffarnagar(UP) 4) 400/220 kV 315 MVA ICT 2 at Muzaffarnagar(UP)
24	GI-2	HARYANA	21-May-2022 18:35	21-May-2022 20:35	2:00	0	0	0.000	0.000	43761	54220	As reported, 800 KV HVDC Kurukshetra(PG) Pole-2 & Pole-4 tripped on dc fault. At the same time, 800 KV HVDC Kurukshetra(PG) Pole-1 & Pole-3 tripped on DMR-2 (dedicated metallic return) short circuit protection operation. As per PMU, no fault is observed and fluctuation in voltage is observed. In antecedent condition, 800 KV HVDC Kurukshetra(PG) Bipole 1 & Bipole 2 were carrying 1000MW each.	1) 800 KV HVDC Kurukshetra(PG) Pole-4 2) 800 KV HVDC Kurukshetra(PG) Pole-2 3) 800 KV HVDC Kurukshetra(PG) Pole-03 4) 800 KV HVDC Kurukshetra(PG) Pole-1
25	GI-2	RAJASTHAN	23-May-2022 01:09	23-May-2022 01:50	0:41	0	0	0.000	0.000	41737	56408	As reported, 765 KV Chittorgarh-Banasikantha (PG) Ckt-1 tripped on DT received from Banasikantha end on over voltage protection operation at Banasikantha end. At the same time, 765 KV Chittorgarh-Banasikantha (PG) Ckt-1 tripped from Banasikantha end only. As per PMU, no fault is observed. In antecedent condition, 765 KV Chittorgarh-Banasikantha (PG) Ckt-1 & Ckt-2 were carrying 135MW each.	1) 765 KV Chittorgarh-Banasikantha (PG) Ckt-1 2) 765 KV Chittorgarh-Banasikantha (PG) Ckt-2
26	GI-2	UTTAR PRADESH	23-May-2022 05:31	23-May-2022 17:38	12:07	0	0	0.000	0.000	34422	34045	As per PMU Line 400 kV Atauri-Hapur (UP) Ckt-1 tripped and auto reclosed. Even after opening of line fault continued and ICT tripped on REF. Diff and PRV.	1) 400 kV Atauri-Hapur (UP) Ckt-1 2) 765/400 kV 1500 MVA ICT 2 at Hapur(UP)
27	GI-2	RAJASTHAN	23-May-2022 05:45	23-May-2022 10:59	5:14	0	0	0.000	0.000	36227	41469	Line 765 KV Khetri (PKTSL)-Jhatikara(PG) (PKTSL) Ckt-1 tripped on Y-N fault. 765/400 kV 1500 MVA ICT 3 at Jhatikara(PG) 765/400 kV 1500 MVA ICT 1 at Jhatikara(PG) Both tripped on 3 phase differential trip.	1) 765/400 kV 1500 MVA ICT 3 at Jhatikara(PG) 2) 765/400 kV 1500 MVA ICT 1 at Jhatikara(PG) 3) 765/400 kV 1500 MVA ICT 4 at Jhatikara(PG) 4) 765 KV Khetri (PKTSL)-Jhatikara(PG) (PKTSL) Ckt-1
28	GI-2	HARYANA	23-May-2022 07:32	23-May-2022 09:32	2:00	0	0	0.000	0.000	32220	34089	Tripped on over voltage protection operated due to sudden rise in voltage caused by load loss during heavy windstorm in the area	1) 400 KV Bahadurgarh-Sonapat (PG) Ckt-1 2) 400 KV Bawana CCGTB(DTL)-Bahadurgarh(PG) (PG) Ckt-1
29	GI-2	NEW DELHI ; HARYANA	23-May-2022 08:01	23-May-2022 11:20	3:19	0	0	0.000	0.000	34448	33990	Tripping of 400 KV Dadr(NT)-Maharanibagh(PG) (PG) Ckt-1 caused high voltage leading to multiple tripping in area due to high voltage.	1) 400 KV Dadr(NT)-Maharanibagh(PG) (PG) Ckt-1 2) 400 KV Bawana CCGTB(DTL)-Bhiwani(PG) (PG) Ckt-1 3) 400 KV Mandola(PG)-Maharanibagh(PG) (DTL) Ckt-1 4) 400 KV Bawana(DV)-Maharanibagh(PG) (DTL) Ckt-1

Details of Grid Events during the Month of May 2022 in Northern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (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 Lost(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
30	GI-2	UTTAR PRADESH	23-May-2022 09:45	23-May-2022 13:01	3:16	0	0	0.000	0.000	32620	36039	As reported at 09:45hrs, 400 KV Badaune(UP)-Rosa(UP) (OCBTL) Ckt-1 successfully autoreclosed on B-N fault. Further after 5secs, 400 KV Badaune(UP)-Rosa(UP) (OCBTL) Ckt-1 & Ckt-2 and 400 KV Sambhal_PRSTL-Badaune (UP) Ckt-1 & Ckt-2 all tripped on over voltage stage-1 protection operation at Badaune end. As per PMU at CB Ganj(UP), B-N phase to earth fault is observed which cleared within 80ms. As per DR received from Badaune end of 400 KV Badaune(UP)-Rosa(UP) (OCBTL) Ckt-1 & Ckt-2, over voltage protection operated correctly.	1) 400 KV Badaune(UP)-Rosa(UP) (OCBTL) Ckt-1 2) 400 KV Badaune(UP)-Rosa(UP) (OCBTL) Ckt-2 3) 400 KV Sambhal_PRSTL-Badaune (UP) Ckt-1 4) 400 KV Sambhal_PRSTL-Badaune (UP) Ckt-2
31	GI-2	UTTAR PRADESH	23-May-2022 11:26	23-May-2022 13:14	1:48	0	0	0.000	0.000	37061	40735	As reported, 400 KV Panki-Aligarh (UP) Ckt-1, 400 KV Rewa Road-Panki (UP) Ckt-1 and 400 KV Unnao-Panki (UP) Ckt-1 all tripped on B-N fault. Fault occurred during inclement weather condition. As per PMU, B-N phase to earth fault is observed which cleared within 80ms. In antecedent condition, 400 KV Panki-Aligarh (UP) Ckt-1, 400 KV Rewa Road-Panki (UP) Ckt-1 and 400 KV Unnao-Panki (UP) Ckt-1 were carrying 31MW, 59MW & 187MW respectively.	1) 400 KV Panki-Aligarh (UP) Ckt-1 2) 400 KV Rewa Road-Panki (UP) Ckt-1 3) 400 KV Unnao-Panki (UP) Ckt-1
32	GI-2	UTTAR PRADESH	23-May-2022 23:36	24-May-2022 01:31	1:55	0	0	0.000	0.000	29175	37217	As reported, at 23:36:01:080hrs, 400KV Ataur-Muradnagar_1 (UP) Ckt-1 tripped on B-N phase to earth fault. Further after approx. 600ms, again B-N fault occurred and 400/220 KV 500 MVA ICT 1 at Ataur(UP) & 400 KV Ataur-Indrapuram (UP) Ckt-1 both tripped on bus bar protection of 400KV Bus-1. As per PMU, B-N fault followed by another B-N fault after approx. 600ms is observed. In antecedent condition, 400KV Ataur-Muradnagar_1 (UP) Ckt-1, 400/220 KV 500 MVA ICT 1 at Ataur(UP) & 400 KV Ataur-Indrapuram (UP) Ckt-1 were carrying 68MW, 46MW & 72MW respectively.	1) 400/220 KV 500 MVA ICT 1 at Ataur(UP) 2) 400 KV Ataur-Muradnagar_1 (UP) Ckt-1 3) 400 KV Ataur-Indrapuram (UP) Ckt-1
33	GI-2	UTTAR PRADESH	26-May-2022 16:34	27-May-2022 04:43	12:09	0	0	0.000	0.000	45872	55222	As reported, 400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt-1 tripped on B-N phase to earth fault, fault distance was 217.9km from Anpara end. At the same time, 400 KV Anpara-Sarnath (UP) Ckt-1 also tripped on Y-N phase to earth fault, fault distance was 196.7km from Anpara end. As per PMU, R-N & Y-N fault without A/R operation is observed. In antecedent condition, 400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt-1 & 400 KV Anpara-Sarnath (UP) Ckt-1 were carrying 389MW & 457MW respectively.	1) 400 KV Anpara_B(UPUN)-Mau(UP) (UP) Ckt-1 2) 400 KV Anpara-Sarnath (UP) Ckt-1
34	GI-2	HARYANA	27-May-2022 18:59	27-May-2022 20:58	1:59	0	0	0.000	0.000	43761	54220	As reported, at 18:59hrs, 800 KV HVDC Kurukshetra(PG) Pole-2 & Pole-4 both tripped on DC line fault. As per PMU, no fault observed and fluctuation in voltage is observed. In antecedent condition, 800 KV HVDC Kurukshetra(PG) Pole-1 & Pole-3 were carrying 450MW each.	1) 800 KV HVDC Kurukshetra(PG) Pole-2 2) 800 KV HVDC Kurukshetra(PG) Pole-4
35	GI-2	UTTAR PRADESH	28-May-2022 15:44	28-May-2022 17:22	1:38	0	0	0.000	0.000	51511	60581	As reported, 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 tripped on B-N phase to earth fault, fault distance was 12.5km from Singrauli end. At the same time, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 also tripped on B-N phase to earth fault, fault distance was 12.8km from Singrauli end and 400 KV Anpara-Obra_B (UP) Ckt-1 tripped on Y-B phase to phase fault. As per SCADA, line only tripped from Obra_B end. As per PMU plot of phase voltage & phase current of Singrauli end, at first, 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 tripped at 15:44:14:880hrs on B-N fault without A/R operation, fault current was approx. 6.7kA from Singrauli end. Further after approx. 5secs of tripping of 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 also tripped on B-N phase to earth fault without A/R operation, fault current was approx. 6.1kA from Singrauli end. In antecedent condition, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 & 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 were carrying 68MW & 346MW respectively.	1) 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 1) 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 2) 400 KV Anpara-Obra_B (UP) Ckt-1
36	GI-2	RAJASTHAN	28-May-2022 21:31	29-May-2022 00:08	2:37	0	0	0.000	0.000	48030	61432	As reported, 400 KV Sikar(PG)-Ratangarh(RS) (PG) Ckt-1 tripped on R-N fault, fault distance was 58.7km from Sikar end. At the same time, 400 KV Sikar(PG)-Ratangarh(RS) (PG) Ckt-2 also tripped on B-N fault after unsuccessful A/R operation. As per PMU, R-N fault followed by B-N fault with unsuccessful A/R operation is observed. In antecedent condition, 400 KV Sikar(PG)-Ratangarh(RS) (PG) Ckt-1 & Ckt-2 were carrying approx. 2MW each.	1) 400 KV Sikar(PG)-Ratangarh(RS) (PG) Ckt-2 2) 400 KV Sikar(PG)-Ratangarh(RS) (PG) Ckt-1
37	GI-2	HARYANA	28-May-2022 21:52	28-May-2022 22:46	0:54	0	0	0.000	0.000	47896	61384	As reported, at 21:52hrs, 800 KV HVDC Kurukshetra(PG) Pole-1 & Pole-3 both tripped on DC line fault. As per PMU, no fault observed and fluctuation in voltage is observed. In antecedent condition, 800 KV HVDC Kurukshetra(PG) Pole-1 & Pole-3 were carrying 375MW each.	1) 800 KV HVDC Kurukshetra(PG) Pole-1 2) 800 KV HVDC Kurukshetra(PG) Pole-3
38	GI-2	UTTAR PRADESH	29-May-2022 12:56	29-May-2022 13:48	0:52	0	0	0.000	0.000	51397	57072	As reported, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 tripped on B-N phase to earth fault, fault distance was 12.9km from Singrauli end. At the same time, 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 also tripped on B-N phase to earth fault, fault distance was 14.27km from Singrauli end. As per PMU plot of phase voltage & phase current of Singrauli end, at first, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 tripped at 12:56:38:720hrs on B-N fault without A/R operation. Further after approx. 160ms of tripping of 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1, 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 also tripped on B-N phase to earth fault with unsuccessful A/R operation. Fault current was approx. 6.5kA from Singrauli end. In antecedent condition, 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 & 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1 were carrying 86MW & 295MW respectively.	1) 400 KV Singrauli(NT)-Anpara(UP) (PG) Ckt-1 2) 400 KV Singrauli(NT)-Allahabad(PG) (PG) Ckt-1
39	GI-2	UTTAR PRADESH	29-May-2022 19:44	29-May-2022 22:59	3:15	0	0	0.000	0.000	43777	54500	As reported, at 19:44hrs, 765 KV Orai-Aligarh (PG) Ckt-2 tripped on R-N phase to earth fault. 765/400 KV 1500 MVA ICT 2 at Aligarh(PG) also tripped approx. 30sec before tripping of 765 KV Orai-Aligarh (PG) Ckt-2 on protection maloperation. As per PMU, B-N fault with unsuccessful A/R operation is observed. In antecedent condition, 765 KV Orai-Aligarh (PG) Ckt-2 and 765/400 KV 1500 MVA ICT 2 at Aligarh(PG) were carrying 517MW & 324MW respectively.	1) 765 KV Orai-Aligarh (PG) Ckt-2 2) 765/400 KV 1500 MVA ICT 2 at Aligarh(PG)
40	GD-1	HARYANA	30-May-2022 16:22	30-May-2022 18:15	1:53	0	100	0.000	0.171	49652	58418	As reported at 16:22hrs, 220 KV Sohna Road (GPTL)-Badshahpur(HV) (HVPNL) Ckt-1 & Ckt-2 both tripped on R-N & B-N phase to earth fault respectively. As information received from SLDC-HR through verbal communication, fault occurred due to damage of wave trap on both the lines during thunderstorm/windstorm (inclement weather condition). At the same time, 220 KV Sohna Road (GPTL)-GurgaonSec7(HV) (HVPNL) Ckt-1 also tripped on R-Y phase to phase fault. Further after approx. 20secs(as per SCADA SOE at NRLDC), 400 KV Gurgaon(PG)-Sohna Road (GPTL) (GPTL) Ckt-1 also tripped on R-N phase to earth fault. Due to tripping of 220 KV Sohna Road (GPTL)-Badshahpur(HV) (HVPNL) Ckt-1 & Ckt-2, load loss of approx. 100MW occurred which later restored through Samaypur after approx. 15-20mins. As per PMU at Gurgaon(PG), at 16:22:30, R-Y-B three phase to earth fault with delayed clearance in 2240ms occurred followed by R-N phase to earth fault with unsuccessful A/R operation at 16:22:50. In antecedent condition, 220 KV Sohna Road (GPTL)-Badshahpur(HV) (HVPNL) Ckt-1 & Ckt-2 were carrying approx. 55MW each.	1) 220 KV Sohna Road (GPTL)-Badshahpur(HV) (HVPNL) Ckt-2 2) 220 KV Sohna Road (GPTL)-Badshahpur(HV) (HVPNL) Ckt-1 3) 400 KV Gurgaon(PG)-Sohna Road (GPTL) (GPTL) Ckt-1 4) 220 KV Sohna Road (GPTL)-GurgaonSec7(HV) (HVPNL) Ckt-1

Details of Grid Events during the Month of May 2022 in Western Region



Sl.No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	WR	01-May-22 16:42	01-May-22 18:44	2:02	243	-	0.004	-	64863	59225	At 16:42 Hrs/01-05-2022, 220 kV Bhuj- Nanavalka (Alfanar) tripped at Nanavalka end without any relay indications and DT received at Bhuj end. As reported by Alfanar, there was no abnormality found during physical inspection. Generation loss of 243 MW occurred at Alfanar Wind Power station due to the loss of evacuation path.	Tripping of 1.220 kV Bhuj- Nanavalka (Alfanar)
2	GD-1	WR	02-May-22 16:17	02-May-22 16:43	0:26	1022	-	0.014	-	72028	65345	At 16:17 Hrs/02-05-2022, 400 kV Durg-REL 1 tripped on B-E fault. At the same time, 400 kV Durg- REL 2 tripped at REL end on DEF protection operation. Due to the loss of evacuation path, there was a generation loss of 1022 MW. Due to bad weather conditions, B-E fault recurred three times within a span of 10 seconds in 400 kV Durg-REL 1&2. During first fault at 16:17:35 Hrs, line A/R successfully at both the ends. During second fault at 16:17:40 Hrs, line A/R at REL end but B phase tripped at Durg end , not reclosed after dead time and line tripped after 2.5 seconds on PDR operation. During this time at 16:17:43 Hrs, 400 kV Durg-REL 2 tripped on DEF protection operation due to unbalance in B phase current. During the third fault at 16:17:44 Hrs, 400 kV Durg-REL 1 (which is connected through R & Y phases only)tripped due to fault recurrence in reclaim time. As intimated by REL, reclaim time kept in Tie bays at REL end revised from 3 sec to 25 sec. As an interim measure, Zone 3 settings revised to take care of DEF and DEF protection disabled at REL end by REL.	Tripping of 1.400 kV Durg- REL 1&2 2.685 MW REL Units 1&2
3	GI-2	WR	08-May-22 05:28	08-May-22 06:20	0:52	-	-	-	-	66315	59434	At 05:28 Hrs/08-05-2022, 765 kV Pune Bus 1 tripped on LBB protection operation of 706 Main bay . Prior to the event, 765 kV Solapur LR (which was out under Voltage regulation) at Pune end closed at 05:24 Hrs due to spurious closing signal. At the same time, differential protection of SLR operated but the LR bay not tripped and resulted in LBB operation. Tie bay of 765 kV Solapur line tripped on LBB operation of 706 LR bay and DT sent to remote end. Main bay of 765 kV Solapur line not tripped at 05:24 Hrs and the line remained in charging condition from Pune end. As reported by PGCIL, LBB of Main bay of 765 kV Solapur line not operated as the current through Main bay was less than 300 A (LBB pickup value). At 05:28 Hrs, current through 706 Main bay increased above 300 A and resulted in LBB operation and tripping of 765 kV Pune Bus 1. There was no load loss due to the event.	Tripping of 1.765 kV Pune Bus 1 2.765 kV Pune- Solapur
4	GD-1	WR	10-May-22 06:05	10-May-22 07:00	0:55	123.5	-	0.002	-	63397	60134	At 06:05 Hrs/10-05-2022, 220 kV Bhuj – Nanavalka (Alfanar) S/C tripped from Alfanar end only on R phase to E/F and A/R successful at Bhuj end. Due to loss of evacuation path, 123.5 MW generation loss occurred at Nanavalka (Alfanar) substation.	Tripping of 1.220 kV Bhuj- Nanavalka (Alfanar) S/c
5	GD-1	WR	10-May-22 23:35	11-May-22 00:31	0:56	-	300	-	0.005	68449	63164	At 23:02 Hrs/10-05-2022, 220 kV Khaparkeda- Kanhan tripped on B-E fault due to disconnection of jumper from wave trap at Khaparkeda substation. At 23:35 Hrs, 220 kV Khaparkeda- Surya lakshmi tripped on O/C protection operation at Khaparkeda end. At the same time, 132 kV Kanhan- Pardi line tripped at Pardi s/s on O/C protection operation. With these tripping, 220 kV Kanhan station became dark. As reported by MSLDC, there was a load loss of 300 MW.	Tripping of 1.220 kV Kanhan- Khaparkeda 2.220 kV Khaparkeda- Surya lakshmi
6	GI-2	WR	11-May-22 11:29	11-May-22 12:59	1:30	1457	-	0.022	-	66817	65377	At 11:29 Hrs/11-05-2022, 765 kV Gadarwara- Jabalpur 1 tripped on Y-E fault. At the same time, 800 MW Gadarwara Units 1&2 tripped on Stage II B/U E/F protection operation. As reported by NTPC Gadarwara, Stage II B/U E/F protection disabled and Stage I B/U E/F protection settings revised (IIN1> 220A with IEC S inverse & TMS as 700 ms) after the event. There was a generation loss of 1457 MW due to the event.	Tripping of 1.765 kV Gadarwara- Jabalpur 1 2.800 MW Gadarwara Units 1&2
7	GI-2	WR	12-May-22 19:24	12-May-22 19:59	0:35	646	-	0.009	-	68398	59735	At 19:24 Hrs/12-05-2022, While synchronising ISP Unit 7, Y phase GCB failed and resulted in operation of LBB protection and tripping of all the elements connected to 400 kV ISP Bus 2. At the same time, ISP Units 1,2&3 (connected with 400 kV ISP Bus 1) tripped on B/U E/F protection operation. There was a generation loss of 646 MW due to the event.	Tripping of 1.400 kV ISP Bus 2 2.400 kV ISP- Indore 2 3.400 kV ISP- Satpura 4.125 MW ISP Units 1, 2, 3, 5, 6&8
8	GI-1	WR	14-May-22 12:34	14-May-22 12:56	0:22	231	-	0.003	-	66552	61670	At 12:34 Hrs/14-05-2022, 220/33 kV ICT1 &2 tripped from LV side(33 kV) at Alfanar due to blast of Y-phase LA on 33 kV Feeder no. 2. Wind generation at Alfanar became zero due to tripping of both the ICT's. Wind generation loss of 231 MW reported by Alfanar.	Tripping of 1. 220/33 kV Nanavalka ICTs 1&2
9	GI-1	WR	15-May-22 04:32	15-May-22 04:56	0:24	-	250	-	0.004	62903	58432	At 04:32 Hrs/ 15-05-2022, Y phase CT of 220 kV Guna line failed at 400/220 kV Bina(MP) s/s and resulted in tripping of all the elements connected to 220 kV Bina(MP) Bus 1 on Busbar protection operation. Load loss of 250 MW was reported by MP SLDC.	Tripping of 1.400/220 kV Bina(MP) ICTs 1&2 2.220 kV Bina(MP)- Guna 3.220 kV Bina(MP)- Bina(PGI) 1&2
10	GD-1	WR	15-May-22 20:14	15-May-22 22:12	1:58	293	-	0.005	-	62918	55826	At 20:14 Hrs/ 15-05-2022, 400 kV Dhariwal- Parli and 400 kV Dhariwal- Bhadravathi tripped on B-E fault. Due to inclement weather conditions, Both the lines A/R successfully once and tripped during recurrence of fault. There was a generation loss of 293 MW due to the loss of evacuation path.	Tripping of 1.400 kV Dhariwal- Parli 2.400 kV Dhariwal- Bhadravathi 3.300 MW MW Dhariwal CTU Unit

Details of Grid Events during the Month of May 2022 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)		
11	GI-1	WR	20-May-22 00:49	21-May-22 02:28	1:39	-	348	-	0.006	67214	58647	At 00:49 Hrs/20-05-2022, 220 kV Jejuri Bus 1 tripped on Busbar protection operation due to broken B-ph suspension string at LV side of 400/220 kV Jejuri ICT-1. After 6 seconds of 220 kV Bus 1 tripping, hanging jumper came into contact with 220 kV Jejuri Bus-2 which led to tripping of all the elements connected to 220 kV Bus 2 on Busbar protection operation. As reported by MSLDC, there was a load loss of 348 MW.	Tripping of 1.220 kV Jejuri Bus 1&2 2.400/220 kV Jejuri ICTs 1,2&3 3.220 kV Jejuri- Phursangi 1&2 4.220 kV Jeuri- Jejuri 1&2 5.220 kV Jejuri- Parvati 6.220 kV Jejuri- Baramati
12	GI-1	WR	21-May-22 09:35	21-May-22 11:30	1:55	275.5	-	0.004	-	61784	56253	At 09:35 Hrs/21-05-2022, 220/33 kV Ostro ICTs 1&2 tripped on O/C protection operation which resulted in generation loss of 275 MW at Ostro substation.	Tripping of 1.220/33 kV Ostro ICTs 1&2
13	GI-2	WR	21-May-22 18:35	21-May-22 19:54	1:19	-	-	-	-	61281	54200	At 18:35 Hrs/21-05-2022, 800 kV HVDC Champa- Kurukshetra Poles 2&4 tripped on DC line fault and 800 kV HVDC Champa- Kurukshetra Poles 1&3 tripped on DMR Short circuit fault.	Tripping of 1.800 kV HVDC Champa- Kurukshetra Poles 1&2 2.800 kV HVDC Champa- Kurukshetra Poles 3&4
14	GI-2	WR	22-May-22 20:58	22-May-22 21:33	0:35	-	-	-	-	63067	53709	At 20:58 Hrs/22-05-2022, 800 kV HVDC Raigarh- Pugalur Poles 1,2,3&4 tripped on DC line fault.	Tripping of 1.800 kV HVDC Raigarh- Pugalur Poles 1&2 2.800 kV HVDC Raigarh- Pugalur Poles 3&4
15	GD-1	WR	23-May-22 01:09	23-May-22 02:28	1:19	1673	-	0.027	-	62747	56454	At 01:09 Hrs/ 23-05-2022, While charging 765 kV Bhuj-Banaskantha line 1 (which tripped at 00:28 Hrs on Over Voltage Stage I protection), 765 kV Bhuj Banaskantha 1& 2 tripped on Over voltage stage I protection operation. At the same time, 765 kV Banaskantha- Chittorgarh 1&2 also tripped on Over Voltage protection operation at Banaskantha end. At the same time, 220 kV Bhuj- Ratadiya 1&2 and 220 kV Bhuj- Baranda tripped at RE stations end on Over Voltage protection operation. 400 kV Bhuj- CGPL 1&2 was under planned shutdown since 08:52 Hrs & 09:12 Hrs of 22-05-2022 for over head	Tripping of 1.765 kV Bhuj- Banaskantha 1&2 2.765 kV Banaskantha- Chittorgarh 1&2 3.220 kV Bhuj- Ratadiya 1&2 4.220 kV Bhuj- Baranda 5.220 kV Bhuj- Gadhsisa
16	GD-1	WR	27-May-22 12:23	27-May-22 12:40	0:17	264	-	0.004	-	66563	58721	At 12:23 Hrs/27-05-2022, 400 kV JPL Stage-I BR tripped on Backup impedance protection operation due to oxidation in Voltage terminal connection in TB in Relay panel. Prior to the event, emergency shutdown of 400 kV JPL Stage-I Bus 4 was taken by JPL at 11:04 Hrs for attending hotspot in 89-601 (R-Phase) Bus isolator. Due to the outage of Bus 4, 400 kV JPL Stage II I/C was connected to 400 kV JPL Stage I Bus 3 through BR tie bay. 400 kV JPL- Raipur -1 & 2 is under break down due to tower collapse since 02.05.2022. With the tripping of 400 kV JPL Stage I JPL Stage II I/C, 250 MW JPL Stage I Units 2 & 3 tripped due to load throw off & 115 MW captive load connected at 220 kV level at Punji Patra also tripped. The net export from JPL Stage I to grid was 264 MW at the time of event.	Tripping of 1. 400 kV JPL Stage I- JPL Stage II I/C 2. 400 kV JPL Stage-I BR 3.250 MW JPL Stage I Units 2&3
17	GI-1	WR	31-May-22 14:12	31-May-22 16:16	2:04	-	-	-	-	69984	63036	At 14:12 Hrs/31-05-2022, While charging 220 kV Navsari - Bhestan 2 (which was under planned outage for pre-monsoon maintenance work), 200 kV Navsari Bus 2 and all the elements connected to it tripped on Busbar protection operation. 220 kV Navsari- Bhestan tripped on SOTF indication. There was no load loss due to the event.	Tripping of 1.220 kV Navsari Bus 2 2.400/220 kV Navsari ICTs 1&2 3.220 kV Navsari- Navsari(GETCO) 2 4.220 kV Navsari- Kawas 1 5.220 kV Navsari- Bhestan 1&2

Details of Grid Events during the Month of May 2022 in Southern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	Karnataka	01-May-22 14:40	01-May-22 15:49	1 hrs 9 mins	0	180	0.00%	0.37%	47063	48483	Complete Outage of 220kV/66kV HSR SS and 220kV/66kV Naganathapura SS of KPTCL. During antecedent conditions, 220kV Naganathapura Somanahalli, 220kV HSR Koramangala were under idle charged condition and 220kV HSR Mysandra was under outage. Because of this, 220kV/66kV Naganathapura SS was radially fed from 220kV/66kV HSR SS. As per the reports submitted, the triggering incident was R-Y fault in 220kV HSR Hoody line at 14:40hrs and the line tripped. At 14:45hrs, 220kV HSR Naganathapura line was hand tripped due to emergency. At 14:57hrs, 220kV HSR EPP line tripped on R-Y fault. Tripping of all these lines resulted in complete outage of 220kV/66kV HSR SS and 220kV/66kV Naganathapura SS.	1. 220kV HSR Hoody 2. 220kV HSR Naganathapura 3. 220kV HSR EPP
2	GD-1	Tamil Nadu	03-May-22 03:05	03-May-22 03:50	45 mins	53	0	0.13%	0.00%	40015	42184	Complete Outage of 230kV/33kV Veeranam SS of TANTRANSCO. During antecedent conditions, there was single bus operation at 230kV/33kV Veeranam SS. As per the reports submitted, the triggering incident was B-ph. CT failure in 230kV Veeranam Kayathar feeder at Veeranam end. Immediately, 230kV BBP operated and all 230kV feeders tripped. This resulted in loss of evacuation of Wind generation and complete outage of 230kV/33kV Veeranam SS.	1. 230kV Veeranam Kayathar 2. 230kV Veeranam Kodikuruchi Line-1&2 3. 230kV Veeranam Abhishekapatti Line-1&2
3	GD-1	Andhra Pradesh	03-May-22 03:16	03-May-22 04:56	1 hrs 40 mins	2645	809	6.56%	1.91%	40327	42328	Complete Outage of 400kV/220kV Kalpaka SS of APTRANSCO, 400kV/220kV Gazuwaka SS of PGCIL SR-2, 400kV HNPLC of M/s Hinduja, 400kV Simhadri Thermal Station of NTPC, 220kV VSS, 220kV/132kV MRS VSS, 220kV/132kV Parawada SS, 220kV/132kV Pendurty SS, 220kV/132kV Gangavaram SS, 220kV/132kV Brandix SS, 220kV/132kV Gazuwaka_AP SS, 220kV/132kV Dairy Farm SS, 220kV Sharadha Alloys and 220kV/132kV Simhachalam SS of APTRANSCO. As per the report submitted, the triggering incident was BN fault in 400kV Kalpaka Gazuwaka line-2. At Kalpaka end, differential operated, A/J operated and line was holding. At Gazuwaka end, differential operated, B pole tripped but not redosed and hence line got tripped on operation of PD. Tripping at 03:16:40hrs. As per the report submitted, the triggering incident was tracking in R-ph. CT of Bus Reactor-2 at 400kV Kalpaka SS which was connected to Bus section-4. Due to non-operation of Bus reactor differential protection, BBP of Bus section-4 and reverse zone protection of connected lines not operated. Fault was cleared by tripping of the remote ends. This resulted in complete outage of 400kV/220kV Kalpaka SS of APTRANSCO, 400kV/220kV Gazuwaka SS of PGCIL SR-2, 400kV HNPLC of M/s Hinduja, 400kV Simhadri Thermal Station of NTPC, 220kV VSS, 220kV/132kV MRS VSS, 220kV/132kV Parawada SS, 220kV/132kV Pendurty SS, 220kV/132kV Gangavaram SS, 220kV/132kV Brandix SS, 220kV/132kV Gazuwaka_AP SS, 220kV/132kV Dairy Farm SS, 220kV Sharadha Alloys and 220kV/132kV Simhachalam SS of APTRANSCO.	1. HVDC Gajuwaka Pole-1&2 2. 400kV Simhadri Vemagiri_AP 3. 400kV Hinduja KV Kota-1&2 4. 400kV Vemagiri Simhadri-1&2 5. 400/220kV Kalpaka ICT-1,2&3 6. 400kV Maradam-Kalpaka-1&2 7. 400kV Kalpaka HNPLC-2 8. 400kV Simhadri Kalpaka-2,3&4 9. 400kV Kalpaka Gajuwaka-1&2 10. 400kV Kalpaka Asupaka-1 11. 400kV Kalpaka Vemagiri_AP 12. 400kV Gajuwaka Vemagiri_PG
4	GD-1	Tamil Nadu	05-May-22 12:45	05-May-22 13:36	51 mins	0	265	0.00%	0.53%	48295	50030	Complete Outage of 230kV/110kV/22kV Karaikudi_TN SS of TANTRANSCO. During antecedent conditions, all the elements were connected to 230kV Bus-1 at Karaikudi_TN SS. As per the report submitted, the triggering incident was failure of B-phase CT in 230kV Karaikudi_TN Karaikudi_PG line-1 at Karaikudi_TN SS. Bus-1 BBP operated and all the elements connected to Bus-1 got tripped except 230kV Karaikudi_TN Kavanur-2 which was hand tripped later at 13:14hrs. Subsequently, all 110kV lines tripped on overloading. This resulted in complete outage of 230kV/110kV/22kV Karaikudi_TN SS.	1. 230kV Karaikudi_TN Kavanur-1,2,3&4 2. 230kV Karaikudi_TN N T Kudi 2 3. 230kV Karaikudi_TN Karaikudi_PG 1&2 4. 230kV/110kV Auto Transformer-1 and 3
5	GD-1	Karnataka	06-May-22 10:30	06-May-22 10:50	20mins	111	0	0.23%	0.00%	48576	48604	Complete Outage of 220kV/33kV KSPDCL SS_3 : As per the reports submitted, the triggering incident was Y-phase CT failure in 33kV feeder-4 of Block-13 of M/s Aadya and the feeder tripped on EFR and OCR protection. At the same time, 220kV/33kV PTR-1&2 got tripped on EFR. This resulted in the complete outage of 220kV/33kV KSPDCL SS-1.	1. 33kV Feeder 1,2,3 & 5 at KSPDCL SS. 2. 220kV/33kV PTR-1&2
6	GD-1	Karnataka	07-May-22 12:35	07-May-22 12:45	10 mins	0	23	0.00%	0.05%	48459	48119	Complete Outage of 220kV/66kV Tallak SS, 220kV/66kV Hiriyur_KAR SS, and 220kV/66kV Chitradurga SS of KPTCL. As per the reports submitted, all the connected elements of 220kV Chitradurga were hand tripped due to observation of arc in SS. This led to tripping of 220kV Hiriyur_KAR Madhugiri line and 220kV Hiriyur_PG Hiriyur_KAR line on overloading. Due to tripping of these lines, there was complete outage of 220kV/66kV Tallak SS, 220kV/66kV Hiriyur_KAR SS, and 220kV/66kV Chitradurga SS of KPTCL.	1. 220kV Chitradurga Tallak 2. 220kV Chitradurga Guttur 3. 220kV Hiriyur_KAR Hiriyur_PG 4. 220kV Hiriyur_KAR Madhugiri
7	GD-1	Karnataka	07-May-22 22:41	07-May-22 23:01	20 mins	0	96	0.00%	0.22%	41012	44237	Complete Outage of 220kV/110kV Shimoga SS and Partial Loss of Supply to 220kV/110kV Kibbanahalli(KB Cross) SS of KPTCL on 07-05-2022 at 22:41hr. During antecedent conditions due to the non-availability of Bus Sectionalisers, 220kV Shimoga SS was under single bus operation and due to 220kV split Bus operation at 220kV/110kV Kibbanahalli(KB Cross) SS (to limit loading of 400kV/220kV Nelamangala ICTs), 220kV Bus-1 was radially fed from 220kV/110kV Shimoga SS. As per the information received, the triggering incident was a BN fault in 220kV Shimoga Varahi line-3 at a distance of 1.1km from Shimoga end. The fault was sensed in Zone-1 at both ends. At the same time, due to operation of dead zone protection, all the elements connected to 220kV Shimoga SS got tripped. This resulted in a complete outage of 220kV/110kV Shimoga SS and partial loss of supply to 220kV/110kV Kibbanahalli(KB Cross) SS.	1. 220kV Shimoga Varahi-1,2&3 2. 220kV Shimoga Sharavathi-2,3&4 3. 220kV Shimoga Geresapa 4. 220kV Shimoga Chikmangalore 5. 220kV Shimoga Hassan 6. 220kV Shimoga KB-Halli 7. 220kV Shimoga Anthrasanahalli 8. 220kV Shimoga Arsikare 9. 220kV Shimoga Kadur
8	GD-1	Karnataka	08-May-22 18:23	08-May-22 19:59	1 hrs 36 mins	66	0	0.19%	0.00%	34573	36027	Complete Outage of 220kV/33kV Ostro Kannada Wind Plant : As per the report submitted, the triggering incident was R-N fault in 220kV Hiriyur Ostro line and the line tripped at both ends. Due to tripping of the only connected line, there was complete loss of supply at 220kV/33kV Ostro Kannada Wind Plant.	1. 220kV Hiriyur Ostro Kannada
9	GD-1	Tamil Nadu	09-May-22 23:26	10-May-22 02:53	3 hrs 27 mins	0	0	0.00%	0.00%	43157	40948	Complete Outage of 230kV Mywadi Switching Station of TANTRANSCO and Multiple Trippings at 400kV/230kV Udumalpet_PG of PGCIL SR-1. During antecedent conditions, there was single bus operation in 230kV Mywadi Switching Station. As per the reports submitted, triggering incident was R-phase CT failure in 230kV Mywadi Kurukathi line at Mywadi SS. Immediately, BBP operated and all the elements connected to 230kV Mywadi SS got tripped. Since 230kV side of 400kV/230kV Udumalpet_PG ICT-1,2 & 3 are connected to 230kV Mywadi Bus, LV side of ICTs tripped on operation of BBP. This resulted in complete outage of 230kV Mywadi Switching Station of TANTRANSCO and multiple trippings at 400kV/230kV Udumalpet_PG.	1. 400kV/230kV ICT-1,2&3 at Udumalpet_PG 2. 230kV Mywadi Udumalpet-1&2 3. 230kV Mywadi Kadamparai-1&2 4. 230kV Mywadi Ponnapuram-1,2&3 5. 230kV Mywadi Othakkalmandapam 6. 230kV Mywadi Sempatty 7. 230kV Mywadi Kurukathi
10	GD-1	Andhra Pradesh	10-May-22 07:40	10-May-22 12:15	4 hrs 35 mins	0	0	0.00%	0.00%	40730	39539	Complete outage of 400kV SEPL, 400kV MEPL and Multiple Trippings at 400kV Nellore Pooling Station : As per the reports submitted, the triggering incident was B-N fault in 400kV NPS SEIL_P1 Line-1 at 07:40hrs and the line tripped. At 07:49hrs, 400kV NPS Thiruvallam Line-1 tripped on R-N fault, ii. 400kV NPS Thiruvallam Line-2 tripped on B-N fault, iii. 400kV NPS MEPL line tripped on R-N fault, iv. 400kV SEPL MEPL line tripped on R-N fault and v. 400kV NPS SEPL line tripped on B-N fault. At the same time, 765kV/400kV NPS ICT-1 tripped on OLC. OCR in line-1 phase. Tripping of 400kV NPS MEPL line, 400kV NPS SEPL line and 400kV MEPL SEPL lines resulted in complete outage of 400kV SEPL and 400kV MEPL.	1. 400kV NPS Thiruvallam Line-1 & 2 2. 400kV NPS MEPL line 3. 400kV SEPL MEPL line 4. 400kV NPS SEPL line 5. 400kV NPS SEIL_P1 Line-1 6. 765kV/400kV NPS ICT-1

Details of Grid Events during the Month of May 2022 in Southern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
11	GD-1	Karnataka	13-May-22 07:24	13-May-22 07:47	23 mins	892	175	2.30%	0.46%	38731	38125	Complete Outage of 400kV/220kV Talaguppa SS, 220kV/110kV Shimoga SS, 220kV/110kV Shiralakoppa SS, 220kV/110kV Sirsi SS of KPCL and 220kV Sharavathy Generating Station and 220kV Sharavathy Tail Race of KPCL and Partial Loss of Supply to 220kV/110kV Kibbanahalli(KB Cross) SS of KPCL. During antecedent conditions due to the non-availability of Bus Sectionalisers. 220kV Shimoga SS was under single bus operation and due to 220kV split Bus operation at 220kV/110kV Kibbanahalli(KB Cross) SS (to limit loading of 400kV/220kV Nelamangala ICTS), 220kV Bus-1 was radially fed from 220kV/110kV Shimoga SS and due to outage of many 220kV Shimoga connected lines and 400kV Talaguppa Nelamangala line, there was no N-1 reliability for 220kV Sharavathy generation evacuation. As per the information received, the triggering incident was failure of B ph CT of 220kV Shimoga Sharavathy line-3 at Shimoga end. Dead zone protection operated resulting in the tripping of all the elements connected to 220kV Shimoga SS (delayed operation of XXms was observed). This resulted in a complete outage of 220kV/110kV Shimoga SS and partial loss of supply to 220kV/110kV Kibbanahalli(KB Cross) SS. The total load loss reported during this event was 960MW (Shimoga-45MW and KB Cross-514MW). After the tripping of Shimoga lines, Sharavathy generation was evacuated through Talaguppa lines. With the tripping of 400kV Hassan Talaguppa line tripped at Hassan end on operation of power swing protection, running Units at Sharavathy got tripped on operation of over frequency stage-1 protection. This resulted in complete outage of 400kV/220kV Talaguppa SS, 220kV/110kV Shimoga SS, 220kV/110kV Shiralakoppa SS, 220kV/110kV Sirsi SS of KPCL and 220kV Sharavathy Generating Station and 220kV Sharavathy Tail Race of KPCL and Partial Loss of Supply to 220kV/110kV Kibbanahalli(KB Cross) SS of KPCL.	1. 220kV Shimoga Sharavathy line-3 2. 400kV Hassan Talaguppa line 3. Unit-1,2,3,4,5,6,7,8 & 10 at Sharavathy
12	GD-1	Karnataka	16-May-22 17:38	16-May-22 18:01	23 mins	0	80	0.00%	0.20%	36769	40158	Complete Outage of 220kV/110kV Alipur SS of KPCL: As per the reports submitted, the triggering incident was tower collapse near Alipur due to heavy wind and rain. This caused B-N fault in 220kV BTPS Lingapura and 220kV Alipur Regulapadu line and the lines tripped. At the same time, 220kV BTPS Alipur line got tripped. Tripping of both connected lines resulted in the complete outage of 220kV/110kV Alipur SS.	1. 220kV BTPS Lingapura 2. 220kV Alipur Regulapadu 3. 220kV BTPS Alipur
13	GD-1	Karnataka	20-May-22 11:05	20-May-22 11:41	36 mins	81	0	0.18%	0.00%	45815	41495	Complete Outage of 220kV/33kV KSPDCL SS-1: As per the reports submitted, triggering incident was RYB fault in 33kV feeder-3 of Block-2 of M/s Aadya and the feeder tripped on EFR and OCR protection. At the same time, 220kV/33kV PTR-1&2 got tripped on EFR. This resulted in the complete outage of 220kV/33kV KSPDCL SS-1.	1. 33kV Feeder 1,2,3,4 & 5 at KSPDCL SS. 2. 220kV/33kV PTR-1&2
14	GD-1	Karnataka	21-May-22 11:21	21-May-22 11:45	24 mins	1000	368	2.25%	0.93%	44450	39757	Multiple Trippings at 400kV/220kV RTPS Station of KPCL and Complete Outage of 220kV/110kV Sedam SS, 220kV/110kV Humnabad SS, 220kV/110kV Halburga SS, 220kV/110kV Shahpur SS, 220kV/110kV Shabad SS, 220kV/110kV Gulbarga SS, 220kV/110kV Bagewadi SS, 220kV/110kV Mallat SS and 220kV/110kV Lingasugur SS of KPCL: During antecedent conditions, 220kV Sedam Tandur, 220kV Bagewadi, Lingasugur Line-1&2, 220kV Bagewadi GM Navar Line-1&2 were under outage. Because of this, 220kV/110kV Sedam SS, 220kV/110kV Humnabad SS, 220kV/110kV Halburga SS, 220kV/110kV Shahpur SS, 220kV/110kV Shabad SS, 220kV/110kV Gulbarga SS, 220kV/110kV Bagewadi SS, 220kV/110kV Mallat SS and 220kV/110kV Lingasugur SS stations were radially fed from 400kV/220kV RTPS Station. At 11:21hrs, 400kV/220kV RTPS ICT-1&3 tripped on over current protection. This resulted in outage of 220kV level of 400kV/220kV RTPS Station. At the same time, 220kV Lingasugur Sindhanur line tripped on line fault. This resulted in complete outage of 220kV/110kV Sedam SS, 220kV/110kV Humnabad SS, 220kV/110kV Halburga SS, 220kV/110kV Shahpur SS, 220kV/110kV Shabad SS, 220kV/110kV Gulbarga SS, 220kV/110kV Bagewadi SS, 220kV/110kV Mallat SS and 220kV/110kV Lingasugur SS.	1. 400kV/220kV RTPS ICT-1 2. 400kV/220kV RTPS ICT-3 3. 220kV Humnabad Sedam Line-1&2 4. 220kV Lingasugur Sindhanur 5. 220kV Lingasugur Bagewadi Line-2
15	GI-2	Andhra Pradesh	01-May-22 00:18	01-May-22 05:08	4 hrs 50 mins	0	0	0.00%	0.00%	42220	45729	Tripping of 400kV Bus-1 of 400kV/220kV Kalpaka SS of APTRANSCO: As per the reports submitted, 400kV Bus-1 Y-phase differential protection operated at Kalpaka SS due to heavy tracking of insulators. Immediately, BBP operated and all the elements connected to Bus-1 got tripped.	1. 400kV Simhadri Kalpaka-3 2. 400kV Maradam Kalpaka-1 3. 400kV/220kV Kalpaka ICT-2 4. 400kV Kalpaka HNPCL-1
16	GI-2	Andhra Pradesh	01-May-22 19:24	02-May-22 00:50	5 hrs 26 mins	0	0	0.00%	0.00%	38654	40547	Tripping of 400kV Bus-1 of 400kV/220kV Kalpaka SS of APTRANSCO: As per the reports submitted, 400kV Bus-1 B-phase differential protection operated at Kalpaka SS due to heavy tracking of insulators. Immediately, BBP operated and all the elements connected to Bus-1 got tripped.	1. 400kV Simhadri Kalpaka-3 2. 400kV Maradam Kalpaka-1 3. 400kV/220kV Kalpaka ICT-2 4. 400kV Kalpaka HNPCL-1
17	GI-1	Andhra Pradesh	06-May-22 18:27	06-May-22 19:32	1 hrs 5 mins	410	0	0.14%	0.00%	37343	40904	Tripping of 220kV Bus-2 of VTPS station of APGENCO: As per the report submitted, the triggering incident was R-N fault in 220kV VTPS Rentachintala line which was connected to 220kV Bus-2 at VTPS. At VTPS end, fault was sensed in Zone-1. But R-pole of CB failed to open leading to LBB operation. This resulted in tripping of all elements connected to 220kV Bus-2 at VTPS.	1. 220kV VTPS Tallapalli Line-4 2. 220kV VTPS Nunna 3. 220kV VTPS Kondapalli-2 4. 220kV VTPS N R Pet 5. 220kV VTPS Nuzvid 6. 220kV VTPS Tadikonda-2 7. 220kV VTPS Chilikallu-2
18	GI-2	Tamil Nadu	10-May-22 06:36	10-May-22 10:12	3 hrs 36 mins	0	0	0.00%	0.00%	40793	38903	Tripping of 400kV Bus-1 and Multiple trippings at 400kV NCTPS Stage II of TANGEDCO: As per the reports submitted, triggering incident was B-N fault in 400kV NCTPS SVCTM Line-1 at 06:36hrs. At both ends, A/R operated and line tripped on persistent fault. At 06:37hrs, Y-N fault was sensed in 400kV Alamathy NCTPS ST2 Line-1. At NCTPS end, MCB failed to open which led to LBB operation and tripping of all the MCBs connected to 400kV Bus-1. At 06:43hrs, 400kV NCTPS Vallur Line-1 and Line-2 tripped on B-N fault and Y-N fault respectively. At 09:20hrs, 400kV NCTPS - SVCTM Line-2 tripped on Y-N fault.	1. 400 kV NCTPS - SVCTM-I & 2 2. 400 kv Alamathy - NCTPS ST2-1 3. 400kV NCTPS Vallur-1&2
19	GI-2	Karnataka	18-May-22 10:13	18-May-22 10:39	26 mins	0	0	0.00%	0.00%	43174	42408	Tripping of 400kV Bus-2 of 400kV Hinduja SS: 400kV Hinduja has bus configuration of One and half breaker scheme. As per the reports submitted, triggering incident was B-phase bus side isolator failure of 400kV Hinduja Kalpaka line-2 at Hinduja end. Immediately, Bus-2 BBP operated and all the Main CBs connected to Bus-2 got tripped. Since 400kV Hinduja Kalpaka Line-1 was under LC and was in the same dia with 400kV Hinduja Kalpaka Line-2, 400kV Hinduja Kalpaka Line-2 was not being fed through tie breaker. Tripping of main breaker led to tripping of the line.	1. 400kV Hinduja Kalpaka Line-2
20	GI-2	Andhra Pradesh	21-May-22 12:43	21-May-22 13:21	38 mins	0	0	0.00%	0.00%	44990	40644	Tripping of 400kV Bus-1 of 400kV/220kV Kalpaka SS of APTRANSCO: As per the reports submitted, the triggering incident was B-phase isolator failure of 400kV Kalpaka HNPCL Line-1 which is connected to 400kV Bus Section-1 at Kalpaka SS. Immediately, Bus Section-1 BBP operated and all the elements connected to Bus-1 got tripped.	1. 400kV Simhadri Kalpaka-3 2. 400kV Maradam Kalpaka-1 3. 400kV/220kV Kalpaka ICT-2 4. 400kV Kalpaka HNPCL-1

Details of Grid Events during the Month of May 2022 in Southern Region



Sl No.	Category of Grid Event (GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
21	GI-2	Tamil Nadu	22-May-22 20:58	22-May-22 21:33	35 mins	0	0	0.00%	0.00%	38101	38737	Tripping of HVDC Pugalar Raigarh Pole-1,2,3&4 of PGCI SR-2: As per the reports submitted, triggering incident was Line fault on DC Line-1&2 of Raigarh Pugalar Poles. The system attempted 4 unsuccessful restarts and tripped all 4 poles due to persistent fault.	1. HVDC Pugalar Raigarh Pole-1,2,3&4
22	GI-1	Andhra Pradesh	27-May-22 19:44	27-May-22 21:54	2 hrs 10 mins	88	0	0.21%	0.00%	41406	44711	Tripping of 220kV Bus-2 of 220kV Lower Sileru PH of APGENCO: As per the reports submitted, while deparalling the Unit-1 which is connected to 220kV Bus-2 R-phase breaker failed to open. This led to LBB operation and all the elements connected to 220kV Bus-2 tripped.	1. 220kV Asupaka Lower Sileru-1 2. 220kV KIPS-V Lower Sileru-2 3. Unit-2 at 220kV Lower Sileru

Details of Grid Events during the Month of May 2022 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	GD-1	Garhwa	01-May-22 15:53	01-May-22 17:27	01:34	0	30	0.00%	0.15%	24857	20055	At 15:53 Hrs, 220 kV Daltonganj-Garhwa D/c tripped. This led to total power failure at 220 kV Garhwa S/s. 30 MW load loss occurred in Garhwa and Meral area	220 kV Daltonganj-Garhwa(New) D/c
2	GD-1	Chatra	01-May-22 17:40	01-May-22 20:28	02:48	0	13	0.00%	0.07%	24414	18094	At 17:40 Hrs 220 kV Daltonganj-Chatra D/c tripped from Daltonganj end only due to fault in downstream. This led to total power failure at Chatra. Total 13 MW load loss occurred.	220 kV Daltonganj-Chatra D/c
3	GD-1	Bokaro A	12-May-22 13:56	12-May-22 14:26	00:30	450	0	1.80%	0.00%	24983	21285	At 13:56 Hrs, 400 kV Bus-1&2 at Bokaro A S/s became dead. As reported, during testing of main bay of 400 kV Bokaro A-Koderma-2 at Bokaro A, LBB maloperated and both buses tripped. 450 MW generation loss occurred as U#1 of Bokaro A tripped due to loss of evacuation path.	400 kV Koderma-Bokaro A-1 400/220 kV 315 MVA ICT-1 & 2 at Bokaro A Bokaro A U#1 (500 MW)
4	GD-1	Patratu	14-May-22 16:04	14-May-22 17:40	01:36	0	60	0.00%	0.27%	27454	22062	At 16:04 Hrs, 400 kV New Ranchi-Patratu D/c tripped due to B_N fault. This led to total power failure at 400/220 kV Patratu S/s. Load loss of around 60 MW occurred in Kanke and Burmu area which were radially fed from Patratu.	400 kV New Ranchi-Patratu D/c
5	GD-1	Barauni	19-May-22 17:25	19-May-22 19:23	01:58	260	34	1.02%	0.18%	25542	18407	At 17:25 Hrs, 220 kV Barauni-Begusarai D/c tripped due to B_N fault. Units at Barauni got in islanded mode with Mokama load which was fed radially through 220 kV Barauni-Mokama D/c. The island didn't survive. Total 260 MW generation loss occurred at Barauni and 34 MW load loss occurred in Mokama area.	220 kV Barauni-Begusarai D/c 220 kV Begusarai-Sarnastipur U#8 and U#9 at Barauni
6	GD-1	Ramchandrapur	21-May-22 01:33	21-May-22 02:32	00:59	0	80	0.00%	0.36%	26647	22384	At 01:33 Hrs, R_ph and Y_ph bus side Jumper of 220 kV Joda-Ramchandrapur-1 snapped at Ramchandrapur which created a bus fault. This led to tripping of all elements at Ramchandrapur. Total 80 MW load loss occurred in Adityapur, Jagugoda and Goltmuri area.	220 kV Ramchandrapur-Jamshedpur D/c 220 kV Joda-Ramchandrapur-1 220 kV Ramchandrapur-Chandil-1 220 kV Ramchandrapur-Chalbasa D/c 150 MVA 220/132 kV ICT-3 at Ramchandrapur
7	GD-1	Garhwa	23-May-22 19:59	23-May-22 21:20	01:21	0	30	0.00%	0.14%	26847	21519	At 19:59 Hrs, 220 kV Daltonganj-Garhwa (New) D/c tripped on R_N fault, leading to total power failure at 220/132 kV Garhwa S/s. Around 30 MW load loss occurred in Garhwa and Meral area.	220 kV Daltonganj-Garhwa (New) D/c
8	GD-1	Lapanga	27-May-22 15:56	27-May-22 16:10	00:14	160	58 MW (Net)	0.63%	0.26%	25529	21949	At 15:56 Hrs, cross bus of 220 kV Katapalli-Lapanga-1 snapped at Lapanga end and fell on both 220 kV Bus. This led to tripping of both bus as all elements tripped in either Zone-4 or Zone-2 from remote ends. 220 kV Budhipadar-Vedanta D/c and 220 kV Budhipadar-Bhushan Steel D/c also tripped sensing the same fault and blackout occurred in Vedanta and Bhushan Steel CPP.U#2 of IBTPS also tripped and 160 MW generation loss occurred. 44 MW net load loss (820 MW generation and 864 MW load loss) occurred at Vedanta and 14 MW net load loss occurred at Bhushan Steel.	220 kV Budhipadar-Lapanga D/c 220 kV Katapalli-Lapanga-1 400/220 kV ICT-1 & 2 at Lapanga 220 kV Budhipadar-Vedanta D/c 220 kV Budhipadar-Bhushan Steel D/c 210 MW U#2 at IBTPS
9	GD-1	Rourkela	30-May-22 11:09	30-May-22 11:51	00:42	0	0	0.00%	0.00%	26022	22835	At 11:09 Hrs, both 400 kV Bus at Rourkela became dead while trying to open line isolator of 400 kV TSTPP-Rourkela-1 at Rourkela end. Teed protection operated, however, B_ph breaker of Talcher-1 at Rourkela was stuck, thereafter LBB operated however LBB didn't function properly due to which all lines tripped from remote ends in Zone-2. No load loss or generation loss occurred.	400 kV Rourkela-Jharsuguda Q/c 400 kV Rourkela-Ranchi-2 400 kV Rourkela-Chalbasa D/c 400/220 kV 315 MVA ICT-1,2,3&4 220 kV Rourkela-Tarkera D/c

Details of Grid Events during the Month of May 2022 in North Eastern Region



Sl No.	Category of Grid Event (G1 to G2/ 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	Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Pwer System	04.05.22 13:03	04.05.22 13:22	0:19:00	8	20	0.34%	1.11%	2372	1794	Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Pwer System were connected with the rest of NER Grid through 132 kV Balipara- Tenga line. At 13:03 Hrs on 04.05.22, 132 kV Balipara- Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Pwer System were 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 13:22 hrs on 04.05.22. Power was extended to Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Pwer System by charging 132 kV Balipara- Tenga line at 09:28 hrs on 05.05.22	132 kV Balipara- Tenga line
2	GD-1	Karong area of Manipur Power System	06.05.22 12:46	06.05.22 13:15	0:29:00	0	16	0.00%	0.75%	2172	2128	Karong area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal (MSPLC) - Karong & 132 kV Karong - Kohima lines. At 12:46 hrs on 06.05.22, 132 kV Imphal (MSPLC) - Karong & 132 kV Karong - Kohima lines tripped. Due to tripping of these elements, Karong area of Manipur Power System was separated from rest of NER Grid and subsequently collapsed due to no source available in this area. Power was extended to Karong area of Manipur Power System by charging 132 kV Imphal (MSPLC) - Karong line at 13:15 hrs on 06.05.22	132 kV Imphal (MSPLC) - Karong & 132 kV Karong - Kohima lines
3	GD-1	Lungmual and Melriat (P&ED Mizoram) areas of Mizoram Power System	06.05.22 13:17	06.05.22 13:25	0:08:00	0	33	0.00%	1.55%	2158	2128	Lungmual and Melriat (P&ED Mizoram) areas of Mizoram Power System were connected with the rest of NER Grid through 132 kV Aizawl - Luangmual line. 132 kV Lunglei - Melriat line was under shutdown to avoid overloading of 132 kV Aizawl-Lungmual line & 132 kV Aizawl - Kumarghat line was under ESD for clearing infringement between LOC no. 154-155. At 13:17 hrs on 06.05.22, 132 kV Aizawl-Lungmual line tripped. Due to tripping of this element, Lungmual and Melriat (P&ED Mizoram) areas of Mizoram Power System were separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power was extended to Lungmual and Melriat (P&ED Mizoram) areas of Mizoram Power System by charging 132 kV Aizawl-Lungmual line at 13:25 hrs on 06.05.22	132 kV Aizawl - Luangmual line
4	GD-1	220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System	06.05.22 22:55	06.05.22 23:41	0:46:00	0	191	0.00%	7.60%	2809	2513	220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System were connected with the rest of NER Grid through 220 kV BTPS - Rangia 1, 220 kV BTPS -Rangia 2 & 132 kV Motonga (Bhutan) - Rangia lines. 132 kV Nalbari-Barpeta line was under shutdown to avoid overloading of 132 kV BTPS-Dhaligaon D/C lines, 132 kV Sipajhar - Rowta line was under shutdown to avoid overloading of 132 kV Sonabil-Depota line & 132 kV Kamalpur-Rangia D/C lines were under shutdown to avoid overloading of ICT's at 220 kV Rangia 5/S. At 22:55 hrs on 06.05.22, 220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2 & 132 kV Motonga (Bhutan) - Rangia lines tripped. Due to tripping of these elements, 220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System were separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power was extended to 220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System by charging 220 kV BTPS - Rangia 2 line at 23:41 hrs on 06.05.22	220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2 & 132 kV Motonga (Bhutan) - Rangia lines
5	GD-1	Dhaligaon area of Assam Power System	16.05.22 01:24	16.05.22 01:41	0:17:00	0	24	0.00%	1.64%	2856	1467	Dhaligaon area of Assam Power System was connected with the rest of NER Grid through 132 kV Bongaigaon - Dhaligaon 1 & 2 lines. At 01:24 hrs on 16.05.22, 132 kV Bongaigaon - Dhaligaon 1 & 2 lines tripped. Due to tripping of these elements, Dhaligaon area of Assam Power System was separated from rest of NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Dhaligaon area of Assam Power System by charging 132 kV Bongaigaon - Dhaligaon 1 line at 01:41 hrs on 16.05.22.	132 kV Bongaigaon - Dhaligaon 1 & 2 lines
6	GD-1	Myntdu Leshka Generating Station of Meghalaya Power System	18.05.22 06:21	18.05.22 06:32	0:11	118	0	4%	0%	3310	1552	Myntdu Leshka Generating Station of Meghalaya Power System was connected with the rest of NER Grid through 132 kV Myntdu Leshka - Khleihriat 1 & 2 lines. At 06:21 hrs on 18.05.2022, 132 kV Myntdu Leshka - Khleihriat 1 & 2 lines tripped. Due to tripping of these elements, Myntdu Leshka Generating Station of Meghalaya Power System was separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path in this area. Power supply was extended to Myntdu Leshka Generating Station of Meghalaya Power System by charging 132 kV Myntdu Leshka - Khleihriat 1 & 2 lines at 06:32 hrs on 18.05.22	132 kV Myntdu Leshka - Khleihriat 1 & 2 lines
7	GD-1	Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	19.05.2022 14:50	19.05.2022 15:50	1:00	0	17	0%	1%	2938	1956	Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 kV Along - Daporijo line. At 14:50 hrs on 19.05.2022, 132 kV Along - Daporijo line tripped. Due to tripping of this element, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to no source available in these areas. 132 kV Along - Daporijo line was declared faulty at 15:50 hrs on 19.05.2022. Power supply was extended to Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Along - Daporijo line at 12:33 hrs on 20.05.22	132 kV Along - Daporijo line

Details of Grid Events during the Month of May 2022 in North Eastern Region



Sl No.	Category of Grid Event (GI 1 to 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
8	GD-4	Myndtu Leshka Generating Station of Meghalaya Power System	19.05.2022 03:55	19.05.2022 04:06	0:11:00	119	0	4.39%	0.00%	2712	1318	Myndtu Leshka Generating Station of Meghalaya Power System was connected with the rest of NER Grid through 132 kV Kheiriati(ME) - Leshka 2 line. 132 kV Kheiriati(ME) - Leshka 1 line tripped at 03:51 hrs on 19.05.22. At 03:55 hrs on 19.05.2022, 132 kV Kheiriati(ME) - Leshka 2 line tripped. Due to tripping of this element, Myndtu Leshka Generating Station of Meghalaya Power System was separated from rest of NER Grid and subsequently collapsed due to loss of evacuation path in this area. Power supply was extended to Myndtu Leshka Generating Station of Meghalaya Power System by charging 132 kV Kheiriati(ME) - Leshka 2 line at 04:06 hrs on 19.05.22.	132 kV Kheiriati(ME) - Leshka 2 line
9	GD-4	220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System	24-May-22 12:32	24-May-22 12:40	0:08:00	0	112	0.00%	4.83%	2381	2319	220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System were connected with the rest of NER Grid through 220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2 was under shutdown due to corridor clearing. 132 kV Nalbari-Barpeta line was under shutdown to avoid overloading of 132 kV BTPS-Dhalgaon D/C lines. 132 kV Sipajhar - Rowta line was under shutdown to avoid overloading of 132 kV Sonabil-Depota line, 132 kV Kahelipara - Kamalpur line was under shutdown due to system requirement. At 12:30 hrs on 24.05.22, 220 kV BTPS - Rangia 1 (132 kV Motonga (Bhutan) - Rangia hand tripped(Bhutan) at 12:32 hrs on 24.05.22) line tripped. Due to tripping of this element, 220 kV Rangia area, 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System were separated from rest of NER Grid and subsequently collapsed due to no load available in these areas. Power extended to 132 kV Rangia, Nalbari, Sipajhar and part load of Bornagar areas of Assam Power System at 12:40 Hrs on 24.05.22 by charging 132 kV Kahelipara-Kamalpur-Rangia line. Power extended to 220kV Rangia Bus by charging 220 kV BTPS(AS)-Rangia(AS)-1 line at 13:30 hrs on 25.05.22.	220 kV BTPS - Rangia 1 line
10	GD-4	Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Pwer System	28.05.22 22:29	28.05.22 22:53	0:24:00	10	14	0.34%	0.51%	2977	2770	Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 kV Balipara- Tenga line. At 22:29 Hrs on 28.05.22, 132 kV Balipara- Tenga line tripped. Due to tripping of this element, Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Power System were 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 23:53 hrs on 28.05.22. Power was extended to Tenga, Khupi areas & Dikshi HEP of Arunachal Pradesh Power System by charging 132 kV Balipara- Tenga line at 13:12 hrs on 30.05.22	132 kV Balipara- Tenga line
11	GI-2	Assam	04-May-22 08:48	04-May-22 10:30	1:42:00	40	0	2.20%	0.00%	1815	1694	AGBPP - Unit 2 tripped at 08:48 hrs on 04-05-22 due to high vibrations of y-axis bearing of turbine. Revision done from Block No.43 on 04-03-22.	AGBPP - Unit 2
12	GI-2	Assam	06-May-22 16:01	06-May-22 17:30	1:29:00	32	0	1.57%	0.00%	2039	2292	AGBPP - Unit 2 tripped at 16:01 hrs on 06-05-22 due to fire trip alarm operated. Revision done from Block No. 71 on 06-05-22.	AGBPP - Unit 2
13	GI-2	Assam	09-May-22 13:04	09-May-22 15:00	1:56	26	0	1%	0%	2065	2384	AGBPP - Unit 8 tripped at 16:01 hrs on 09-05-22 due to tripping of cooling fan, winding temp high alarm. Revision done from Block No. 61 on 09-05-22.	AGBPP - Unit 8
14	GI-2	Assam	12-May-22 23:19	13-May-22 01:00	1:41	25	0	1%	0%	2205	2385	AGBPP - Unit 6 tripped at 23:19 hrs on 12-05-22 due to exhaust temperature spread high. Revision done from Block No. 05 on 13-05-22.	AGBPP - Unit 6
15	GI-2	Assam	13-May-22 11:39	13-May-22 13:00	1:21	227.5	0	15%	0%	1472	1874	BGTPP - Unit 3 tripped at 11:39 hrs on 13-05-22 due to flame failure. Revision done from Block No. 53 on 13-05-22.	BGTPP - Unit 3
16	GI-2	Tripura	18-May-22 20:29	18-May-22 22:00	1:31	216	0	9%	0%	2509	2406	Palatana GT II tripped at 20:29 hrs on 18-05-22 due to low drum level and Palatana ST II tripped due to tripping of Palatana GT II. Revision done from Block No. 89 on 18-05-22.	Palatana GT II & ST II
17	GI-2	Arunachal Pradesh	21-May-22 09:44	21-May-22 11:30	1:46	151	0	6%	0%	2417	1727	Kameng Unit I tripped at 09:44 hrs on 21-05-22 due to stator earth fault. Revision done from Block No. 47 on 21-05-22.	Kameng Unit I
18	GI-2	Assam	31-May-22 08:56	31-May-22 10:45	1:49	40	0	2%	0%	2272	2285	AGBPP Unit 1 tripped at 08:56 hrs on 31-05-22 due to power failure at emergency bus (L/V relay optd.) and AGBPP Unit 7 tripped due to non-availability of GTG-1 and 2. Revision done from Block No. 43 on 31-05-22.	AGBPP Unit 1 & AGBPP Unit 7
19	GI-2	Assam	31-May-22 13:48	31-May-22 15:30	1:42	227.5	0	9%	0%	2477	2468	BgTPP Unit 3 tripped at 13:48 hrs on 31-05-22 due to tripping of boiler due to loss of PA header. Revision done from Block No. 63 on 31-05-22.	BgTPP Unit 3