Details of Grid Events during the Month of April 2021 in Northern Region

Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-2	NEW DELHI	01-Apr-2021 12:20	01-Apr-2021 16:57	4:37	0	0	0.000	0.000	29710	34960	As reported, 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-1 and Ckt-2 both successfully auto-reclosed on B-N & R-N phase to earth fault respectively and later both line tripped after 3sec on same faults. As per PMU, B-N phase to earth fault observed on 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-1 and R-N phase to earth fault observed on 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-2. In antecedent condition, 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-1 and Ckt-2 carrying approx. 20MW each.	1) 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-1 2) 400 KV Bamnoli(DV)-Tughlakabad(PG) (DTL) Ckt-2
2	GI-2	RAJASTHAN	02-Apr-2021 14:17	02-Apr-2021 16:21	2:04	0	0	0.000	0.000	33352	34615	As reported, 400 KV Jaisalmer-Barmer (RS) Ckt-1 tripped on B-N phase to earth fault. Fault distance was 14.53km and fault current was 7.269kA from Barmer end. At the same time, 400 KV Barmer(RS)-Rajwest(RW) (RS) Ckt-1 also tripped. As per PMU, B-N phase to earth fault with delayed clearance of 440ms is observed. In antecedent condition, 400 KV Jaisalmer-Barmer (RS) Ckt-1 & 400 KV Barmer(RS)-Rajwest(RW) (RS) Ckt-1 carrying 147MW & 216MW respectively.	1) 400 KV Barmer(RS)-Rajwest(RW) (RS) Ckt-1 2) 400 KV Jaisalmer-Barmer (RS) Ckt-1
3	GD-1	HIMACHAL PRADESH	06-Apr-2021 23:35	07-Apr-2021 06:49	7:14	120	0	0.368	0.000	32606	40406	As reported, 220 KV Bairasiul(NH)-Jessore(HP) (PG) Ckt-1 & 220 KV Bairasiul(NH)-Pong(BB) (PG) Ckt-1 tripped on Over Voltage. As per PMU, B-N followed by multiple phase to earth faults in R phase is observed. As per SCADA, Bus-1 & Bus-2 voltage observed as 239kV and 241kV. At the same time, 60MW Unit-1 & Unit-2 of Bairasiul(NH) also tripped. In antecedent condition, 220 KV Bairasiul(NH)-Jessore(HP) (PG) Ckt-1 & 220 KV Bairasiul(NH)-Pong(BB) (PG) Ckt-1, 60MW Unit-1 & Unit-2 of Bairasiul(NH) carrying 73MW, 46MW, 61MW & 61MW respectively.	1) 220 KV Bairasiul(NH)-Jessore(HP) (PG) Ckt-1 2) 220 KV Bairasiul(NH)-Pong(BB) (PG) Ckt-1
4	GD-1	UTTAR PRADESH	10-Apr-2021 04:53	10-Apr-2021 06:18	1:25	380	0	1.152	0.000	32999	41124	As reported, 210 MW Unchahar II TPS - UNIT 1 & UNIT 2 both tripped while synchronizing Unit-5. At the same time, 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-1, Ckt-2, Ckt-3 & Ckt-4 all tripped from Unchahar(NT) end only on Bus Bar protection of Bus 3 operated. As per PMU, 3 phase fault is observed. As per SCADA, generation loss of approx. 380MW is observed at Unchahar(NT). In antecedent condition, 210 MW Unchahar II TPS - UNIT 1 & UNIT 2 carrying 191MW & 198MW and 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-1, Ckt-2, Ckt-3 & Ckt-4 carrying 70MW each.	1) 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-1 2) 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-3 3) 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-2 4) 220 KV Kanpur(PG)-Unchahar(NT) (PG) Ckt-4 5) 210 MW Unchahar II TPS - UNIT 1 6) 210 MW Unchahar II TPS - UNIT 2
5	GD-1	UTTAR PRADESH	13-Apr-2021 16:48	13-Apr-2021 20:34	3:46	280	0	0.815	0.000	34336	38880	As reported, 400 KV Badaune-Rosa(UPC) (UP) Ckt-1 tripped in carrier added Z-2 tripping from Rosa end on B-N phase to earth fault. At the same time, 400KV Bus bar main-2 at Rosa TPS relay malfunctioned and generated false bus bar (both bus-1 & bus-2) tripping to all the connected feeders whereas Bus main-1 relay did not sense any fault. As per PMU, B-N phase to earth fault with unsuccessful autoreclosing is observed. As per SCADA, generation loss of approx. 280MW at Rosa TPS is observed. In antecedent condition, 400/220 kV 200 MVA ICT 1 & ICT 2 carrying approx. 10MW each and 300 MW Rosa TPS - UNIT 3 & UNIT 4 carrying 147MW & 140MW respectively.	1) 400KV Bus 1 at Rosa(UPC) 2) 400/220 kV 200 MVA ICT 1 at Rosa(UPC) 3) 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-1 4) 400KV Bus 2 at Rosa(UPC) 5) 400/220 kV 200 MVA ICT 2 at Rosa(UPC) 6) 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-2 7) 400 KV Badaune-Rosa(UPC) (UP) Ckt-1 8) 400 KV Badaune-Rosa(UPC) (UP) Ckt-2 9) 300 MW Rosa TPS - UNIT 3, 300 MW Rosa TPS - UNIT 4
6	GI-2	UTTAR PRADESH	15-Apr-2021 22:48	16-Apr-2021 00:50	2:02	0	0	0.000	0.000	38532	48818	As reported, 400 KV Azamgarh-Mau (UP) Ckt-1 tripped on Y-N phase to earth fault. Fault occurred due to damage of Y phase LA of 400 KV Azamgarh-Mau (UP) Ckt-1. Fault distance was 0.2km from Azamgarh end and 42.14km from Mau end. At the same time 400 KV Tanda(NT)-Azamgarh(UP) (UP) Ckt-1 also tripped. As per PMU, Y-N phase to earth fault with unsuccessful autoreclosing observed. In antecedent condition, 400 KV Azamgarh-Mau (UP) Ckt-1 and 400 KV Tanda(NT)-Azamgarh(UP) (UP) Ckt-1 carrying 313MW & 71MW respectively.	1) 400 KV Azamgarh-Mau (UP) Ckt-1 2) 400 KV Tanda(NT)-Azamgarh(UP) (UP) Ckt-1
7	GD-1	HARYANA	16-Apr-2021 15:11	16-Apr-2021 18:13	3:02	390	360	1.238	0.968	31497	37171	As reported, 400 KV CLP Jhajjar(CLP)-Dhanoda(HV) (HVPNL) Ckt-1 tripped on DT received from Dhanoda(HV) end followed by tripping of 660 MW Jhajjar(CLP) - UNIT 1. At the same time, 400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-1 also tripped. As per PMU, B-N phase to earth fault is observed. As per SCADA, load loss of approx. 360MW and generation loss of approx. 390MW is observed. In antecedent condition, 400 KV CLP Jhajjar(CLP)-Dhanoda(HV) (HVPNL) Ckt-1 and 400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-1 carrying 314MW & 156MW respectively.	1) 400 KV CLP Jhajjar(CLP)-Dhanoda(HV) (HVPNL) Ckt-1 2) 660 MW Jhajjar(CLP) - UNIT 1 3) 400 KV Deepalpur(JHKT)-Kabulpur(HV) (HVPNL) Ckt-1
8	GI-2	UTTAR PRADESH	16-Apr-2021 16:43	16-Apr-2021 18:16	1:33	0	0	0.000	0.000	29854	35448	As reported, 400 KV Alaknanda GVK(UPC)-Vishnuprayag(JP) (UP) Ckt-1 & 400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) Ckt-1 both tripped on Bus Bar protection operated at Vishnuprayag end due to B-N phase to earth fault. Lines tripped from remote end on DT received. As per PMU, B-N phase to earth fault is observed.	1) 400 KV Muzaffarnagar(UP)-Vishnuprayag(JP) (UP) Ckt-1 2) 400 KV Alaknanda GVK(UPC)-Vishnuprayag(JP) (UP) Ckt-1
9	GI-2	UTTRAKHAND	17-Apr-2021 15:33	17-Apr-2021 17:26	1:53	0	0	0.000	0.000	33579	36637	As reported, 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1 & Ckt-2 both tripped on B-R line to line fault. At the same time, 400/220 kV 315 MVA ICT 1 at Srinagar(UK) also tripped on three phase fault. As per PMU, B-R line to line fault is observed.	1) 400/220 kV 315 MVA ICT 1 at Srinagar(UK) 2) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-2 3) 220 KV Singoli Bhatwari(Singoli(LTUHP))-Srinagar(UK) (PTCUL) Ckt-1
10	GD-1	UTTRAKHAND	20-Apr-2021 14:30	20-Apr-2021 15:17	0:47	0	150	0.000	0.400	33985	37527	As reported, 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 & Ckt-2 both tripped from Khodri end on Bus Bar protection operated at Khodri end (Bus 2) due to thunderstorm during inclement weather. As per PMU, no fault is observed. As per SCADA, load loss of approx. 150MW is observed. In antecedent condition, 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 & Ckt-2 carrying 77MW & 73MW respectively.	1) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-1 2) 220 KV Khodri(UK)-Majri(HP) (UK) Ckt-2
11	GI-2	UTTAR PRADESH	21-Apr-2021 16:46	21-Apr-2021 18:26	1:40	0	0	0.000	0.000	33617	36554	As reported, 400kKV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 & Ckt-2 both tripped on Y-B line to line fault. Fault current was 26kA at Bareilly(PG) end. As per PMU, Y-B line to line fault with delayed clearance of 380ms is observed. In antecedent condition, 400 kV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 & Ckt-2 carrying aprrox. 50MW each.	1) 400 KV Bareilly(UP)-Bareilly(PG) (PG) Ckt-1 2) 400 KV Bareilly(UP)-Bareilly(PG) (PG) Ckt-2
12	GI-2	UTTAR PRADESH	22-Apr-2021 02:52	22-Apr-2021 05:54	3:02	0	0	0.000	0.000	28564	36435	As reported, 400 KV Gorakhpur(PG)-Gorakhpur(UP) (PG) Ckt-1 tripped on Y-B fault, Fault Current was Ib 5.87kA & Ic 5.804kA, Distance was 1.224km from Gorakhpur(UP). At the same time, 220 KV Gorakhpur(PG)-Gorakhpur_2(UP) (UP) Ckt-1, 400/220 kV 315 MVA ICT 2 & ICT 3 at Gorakhpur(UP) all tripped on Bus Bar protection (Bus 1). As per PMU, Y-B phase to phase fault is observed. In antecedent condition, 400 KV Gorakhpur(PG)-Gorakhpur(UP) (PG) Ckt-1, 400/220 kV 315 MVA ICT 2 & ICT 3 at Gorakhpur(UP) carrying 92MW, 110MW & 80MW respectively.	1) 400 KV Gorakhpur(PG)-Gorakhpur(UP) (PG) Ckt-1 2) 220 KV Gorakhpur(PG)-Gorakhpur_2(UP) (UP) Ckt-1 3) 400/220 kV 240 MVA ICT 3 at Gorakhpur(UP) 4) 400/220 kV 315 MVA ICT 2 at Gorakhpur(UP)
13	GI-1	HIMACHAL PRADESH	22-Apr-2021 23:02	22-Apr-2021 23:59	0:57	0	0	0.000	0.000	36280	44808	As reported, 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1 tripped on B-N phase to earth fault. Fault distance was 76.2km from AD Hydro end & 79.28km from Nallagarh end. At the same time, 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 also tripped due to under voltage. Under voltage occurred because 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt-1 was already under forced outage. As per PMU, B-N phase to earth fault is observed. In antecedent condition, 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1 & 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 carrying approx. 18MW each.	1) 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 2) 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1

Details of Grid Events during the Month of April 2021 in Northern Region

Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
14	GI-2	UTTAR PRADESH	26-Apr-2021 14:17	26-Apr-2021 15:35	1:18	0	0	0.000	0.000	33968	39231	As reported, 400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-1 & Ckt-2, 400 KV Gr.Noida_2(UPC)-Noida Sec 148 (UP) CKt-1 & Ckt-2, and 400/220 kV 500 MVA ICT 1 at Noida Sec 148(UP) all tripped on Bus bar protection operation at Noida Sec 148(UP). There was problem in both DC source 1 & 2. During the rectification of DC earth fault, both DC source were switched off simultaneously by mistake which resulted into Bus Bar trip command to both bus and all 400kV elements got tripped. DC earth fault found in RTCC panel of 500 MVA T/F. As per PMU, no fault is observed. As per SCADA, no load loss was observed as load was fed from 220kV Bus through 220 KV sec-148- RC green and 220 KV sector 148 - 129 line. In antecedent condition, 400/220 kV 500 MVA ICT 1 at Noida Sec 148(UP) carrying 207MW.	1) 400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-1 2) 400KV Bus 2 at Noida Sec 148(UP) 3) 400KV Bus 1 at Noida Sec 148(UP) 4) 400 KV Noida Sec 148-Noida Sec 123 (UP) Ckt-2 5) 400 KV Gr.Noida_2(UPC)-Noida Sec 148 (UP) Ckt-2 6) 400 KV Gr.Noida_2(UPC)-Noida Sec 148 (UP) Ckt-1 7) 400/220 kV 500 MVA ICT 1 at Noida Sec 148(UP)
15	GI-2	RAJASTHAN	28-Apr-2021 18:32	28-Apr-2021 21:56	3:24	0	0	0.000	0.000	36395	44551	As reported, 400 KV Kankani-Jaisalmer (RS) Ckt-2 tripped on Y-N phase to earth fault, fault distance: 107.5km from Kankani end and 38.9km from Jaisalmer end. At the same time, 400 KV Akal-Jaisalmer (RS) Ckt-1 and 400 KV Jaisalmer-Barmer (RS) Ckt-2 both tripped in Z-2 from remote end only. As per PMU, Y-N phase to earth fault with delayed clearance of 680ms is observed. As per SOE, line didn't trip from Jaisalmer end and later fault cleared in Z-2 tripping of 400 KV Akal-Jaisalmer (RS) Ckt-1 and 400 KV Jaisalmer-Barmer (RS) Ckt-2 from remote end only. In antecedent condition, 400 KV Kankani-Jaisalmer (RS) Ckt-2, 400 KV Akal-Jaisalmer (RS) Ckt-1 and 400 KV Jaisalmer-Barmer (RS) Ckt-2 carrying 53MW, 46MW and 19MW respectively.	1) 400 KV Jaisalmer-Barmer (RS) Ckt-2 2) 400 KV Akal-Jaisalmer (RS) Ckt-1 3) 400 KV Kankani-Jaisalmer (RS) Ckt-2
16	GD-1	UTTAR PRADESH	28-Apr-2021 22:30	29-Apr-2021 00:03	1:33	75	45	0.187	0.089	40042	50418	As reported, 400 KV Alaknanda GVK(UPC)-Muzaffarnagar (UP) Ckt-1, 400 KV Muzaffarnagar-Ataur (UP) Ckt-1, 400 KV Roorkee(PG)-Muzaffarnagar(UP) (PG) Ckt-1, 400 KV Meerut(PG)-Muzaffarnagar(UP) (PG) Ckt-1, 00 KV Alaknanda GVK(UPC)-Vishnuprayag(JP) (UP) Ckt-1, 400/220 kV 315 MVA ICT 1, ICT 2, ICT 3 & ICT 4 at Muzaffarnagar(UP) all tripped on Bus bar protection operation due to Y-ph CT of 400kV Bus coupler got damaged. As per PMU, Y-N phase to earth fault is observed. As per SCADA, load loss of approx. 45MW in Uttarakhand region and generation loss of approx. 75MW of Alaknanda HEP is observed. In antecedent condition, 400/220 KV 315 MVA ICT 1, ICT 2, ICT 3 & ICT 4 at Muzaffarnagar(UP) carrying 75MW, 83MW, 80MW & 121MW respectively.	1) 400/220 kV 315 MVA ICT 3 at Muzaffarnagar(UP) 2) 400/220 kV 315 MVA ICT 2 at Muzaffarnagar(UP) 3) 400/220 kV 315 MVA ICT 1 at Muzaffarnagar(UP) 4) 400/220 kV 315 MVA ICT 4 at Muzaffarnagar(UP) 5) 400 KV Alaknanda GVK(UPC)-Vishnuprayag(JP) (UP) Ckt-1 6) 400 KV Alaknanda GVK(UPC)-Muzaffarnagar (UP) Ckt-1 7) 400 KV Muzaffarnagar-Ataur (UP) Ckt-1 8) 400 KV Roorkee(PG)-Muzaffarnagar(UP) (PG) Ckt-1 9) 400 KV Meerut(PG)-Muzaffarnagar(UP) (PG) Ckt-1
17	GD-1	HIMACHAL PRADESH	29-Apr-2021 02:15	29-Apr-2021 05:46	3:31	60	0	0.167	0.000	35895	46596	As reported, 400 KV Nathpa Jhakri(SJ)-Karcham Wangtoo(JSW) (HBPCL) Ckt-1, 400kV Nathpha Jhakri-Gumma Ckt-1, 400 KV Nathpa Jhakri(SJ)-Rampur HEP(SJ) (PG) Ckt-1 and 250MW Unit1 at Nathpa Jhakri(SJ) all tripped on bus bar protection operation of bus 1 & bus 3. Bus bar operated because Bus Bar-1 compartment of N. Jhakri-Karcham Wangtoo-2 had some issue with the dielectric strength of SF-G gas. As per PMU, R-N phase to earth fault is observed. As per SCADA, generation loss of approx. 60MW is observed at Nathpa Jhakri HEP. In antecedent condition, 400 KV Nathpa Jhakri(SJ)-Karcham Wangtoo(JSW) (HBPCL) Ckt-1, 400kV Nathpha Jhakri-Gumma Ckt-1 and 400 KV Nathpa Jhakri(SJ)-Rampur HEP(SJ) (PG) Ckt-1 all carrying 47MW, 20MW & 120MW respectively.	1) 400KV Bus 3 at Nathpa Jhakri(SJ) 2) 400KV Bus 1 at Nathpa Jhakri(SJ) 3) 400 KV Nathpa Jhakri(SJ)-Karcham Wangtoo(JSW) (HBPCL) Ckt-1 4) 400 KV Nathpa Jhakri(SJ)-Rampur HEP(SJ) (PG) Ckt-1 5) 400/22 kV 25 MVA ST 1 at Nathpa Jhakri(SJ) 6) 400 KV Nathpa Jhakri(SJ)-Panchkula(PG) (PG) Ckt-1
18	GD-1	HARYANA	30-Apr-2021 23:55	01-May-2021 00:40	0:45	0	190	0.000	0.381	36577	49930	As reported, 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-1, Ckt-2, Ckt-2 & Ckt-4 all tripped on Bus bar protection operated at 220kV GurgaonSec72(HV). As per PMU, R-N phase to earth fault followed by Y-N phase to earth fault is observed. As per SCADA, load loss of approx. 190MW is observed in Haryana region. In antecedent condition, 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-1, Ckt-2, Ckt-2 & Ckt-4 carrying 102MW, 79MW, 104MW & 131MW respectively.	1) 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-2 2) 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-3 3) 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-4 4) 220 KV Gurgaon(PG)-GurgaonSec72(HV) (HVPNL) Ckt-1

Details of Grid Events during the Month of April 2021 in Western Region

Sl No.	Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
	(GI 1or 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	WR	08-Apr-21 12:14	08-Apr-21 13:51	1:37	57	-	0.08%	-	68907	59375	At 12:14 Hrs on 08-04-21, 220kV Bhuj Bus- 2B tripped on bus bar protection on R-E fault due to contact of foreign material with the bus (heavy wind reported by site) which resulted in tripping of 400/ 220kV Bhuj ICT - 2 and 220kV Bhuj- Dayapar. Also, 220KV Bhuj - Alfanar (connected to Bus section 2C at Bhuj S/S) tripped at Alfanar end and 220kV Bhuj - Naranpar (connected to Bus section 2A at Bhuj S/S) tripped at Naranpar end . Due these trippings, generation loss of 57 MW(30 MW at Naranpar, 15 MW at Dayapar and 12 MW at Alfanar) occurred.	Tripping of 1.220 kV Bhuj Bus 2B 2.400/220 kV Bhuj ICT 2 3.220 kV Bhuj-Dayapar 4.220 kV Bhuj-Alfanar 5.220 kV Bhuj-Naranpar
2	GI-1	WR	08-Apr-21 12:16	08-Apr-21 12:24	0:08	371	-	0.54%	-	68809	59201	At 12:16 Hrs on 08-04-21, 220 kV DGBP-Kasor 1 tripped on B-E fault. After this tripping 220/132 kV 100 MVA DGBP ICT became overloaded and resulted in LTS operation and tripping of 132 kV DGBP-Dhanduka 1&2. At 12:24 Hrs, 220 kV DGBP-Kasor 2 autoreclosed sucessfully on B-E fault. During the A/R of the line, 220/132 kV 100 MVA DGBP ICT and 220 kV Bus coupler tripped on B/U Over current protection operation. This resulted in tripping of DGBP Unit 3 on Over frequency protection operation due to the loss of evacuation path.	Tripping of 1.220 kV DGBP-Kasor 1 2.220/132 kV 100 MVA DGBP ICT 3.132 kV DGBP-Dhandhuka 1&2 4.DGBP Unit 3
3	GI-1	WR	10-Apr-21 12:39	10-Apr-21 13:17	0:38	-	-	-	-	66390	57084	At 12:39 Hrs/10-04-21, 220 kV Bhanpura Bus tripped on bus bar protection operation due to R phase PT failure and all the connected elements tripped.	Tripping of 1.220 kV Bhanpura- Modak 2.220 kV Bhanpura- Ranpur 3.220 kV Bhanpura- Swasra 4.220 kV Bhanpura- Nipaniya 5.220/132 kV Bhanpura ICT 1
4	GD-1	WR	10-Apr-21 18:47	10-Apr-21 19:18	0:31	-	250	-	0.47%	65596	52726	At 18:47 Hrs on 10-04-21, 220 kV Chhuri-Bishrampur 2 tripped on R-E fault. Prior to this tripping, 220 kV Chhuri-Bishrampur 1 tripped on B-E fault at 17:52 Hrs. With these tripping, total interruption occurred at 220/132 kV Bishrampur s/s & 132 kV Ambikapur,Batoli,Udaipur, Wadrafnagar,Rajpur, Balrampur And Pratappur substations.	Tripping of 1.220 kV Chhuri-Bishrampur 1&2
5	GI-2	WR	12-Apr-21 15:39	12-Apr-21 16:00	0:21	500	-	0.73%	-	68175	58564	At 15:39 Hrs on 12-04-21, 400 kV Koyna IV - Lonikhand and 220 kV Lonikhand-Khatapur tripped on R-E fault. During the tripping of these lines, 250 MW Koyna StageIV Units 2&3 also tripped.	Tripping of 1.400 kV Koyna IV - Lonikhand 2.220 kV Lonikhand-Khatapur 3.250 MW Koyna IV Units 2&3
6	GD-1	WR	25-Apr-21 17:37	25-Apr-21 19:25	1:48	-	83	-	0.16%	64064	53085	At 17:37 Hrs on 25-04-21, 220 kV Sayali-Khadoli and 220 kV Sayali-Vaghchipa tripped on Y-E fault which resulted in blackout of 220 kV Sayali substation. There was a load loss of 83 MW due to the event.	Tripping of 1.220 kV Sayali-Khadoli 2.220 kV Sayali-Vaghchipa
7	GI-2	WR	27-Apr-21 12:36	27-Apr-21 13:35	0:59	795	-	1.20%	-	66522	55887	At 12:36 Hrs/27-04-21, While closing Isolator of Wanakbori GT-5, 400 kV Wanakbori-Wanakbori I/C 1&2 tripped on B/U Earth fault protection operation due to sparking in R phase isolator. After the tripping of I/C 1&2, Wanakbori Unit 8 tripped due to loss of evacuation path.	Tripping of 1.400 kV Wanakbori-Wanakbori I/C 1&2 2.800 MW Wanakbori Unit 8
8	GI-2	WR	29-Apr-21 19:48	29-Apr-21 20:33	0:45	-	-	-	-	62822	49566	At 19:48 Hrs on 29-04-21, 400 kV Akola Bus 1 tripped on BB protection operation due to sparking in 410 89A Bphase (Main Bay) isolator of 400 kV Akola Bhusawal line. 400 kV Akola-Akola(2) 1&2 should have been remained in service through tie bays but tie bays tripped during the event and resulted in tripping of these lines. 400 kV Akola-Nandgaonpeth & 400 kV Akola-Bhusawal also tripped as the tie bays were already in open condition due to the outage of 400 kV Akola-Wardha 1&2 for diversion works.	Tripping of 1.400 kV Akola Bus 1 2.400 kV Akola- Bhusawal 3.400 kV Akola- Nandgaonpeth 4.400 kV Akola- Akoal(2) D/C

Details of Grid Events during the Month of April 2021 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)		
9	GD-1	WR	29-Apr-21 23:05	29-Apr-21 23:50	0:45	20	428	0.03%	0.80%	67390	53272	At 23:05 Hrs on 29-04-21, R-Phase CT of 132 KV Narsinghpur- Barman 2 blasted at Narsinghpur s/s resulting in tripping of all the elements connected to 132 kV Narsinghpur Bus. After the tripping of 220/132 kV ICTs 1, 2 & 3 at 220 KV S/s Narsinghpur, due to load shifting 220 kV/132 kV Chichli ICT , 132 kV Pipariya – Bankhedi, 132 kV Chichli – Udaipura and 132 KV Jabalpur – Shahpura tripped on Backup O/C protection operation. Load served by 220 kV Chichli & Narsinghpur s/s, 132 kV Shahpura, Shrinagar, Barman, Gadarwara, Karakbel, Belkheda, Palohabada, Pondar, Bankhedi, Devnagar and Karapgaon substations affected due to the event.	Tripping of 1.132 kV Narshingpur Bus 2.132 kV Narsinghpur-Barman 1&2 3.132 kV Narsinghpur-Narsinghpur I/C 1&2 4.220/132 kV Narsinghpur ICTs 1,2&3 5.132 kV Narsinghpur-Gadarwara 6.220/132 kV Chichli ICT 7.132 kV Chichli-Udhaypura 8.132 kV Jabalpur-Shahpura 9.132 kV Pipariya-Bhankedi 10.132 kV Gadarwara-BLA 1&2
10	GI-1	WR	30-Apr-21 20:00	30-Apr-21 20:36	0:36	42	-	0.06%	-	65276	48146	At 20:00 hrs on 30.04.2021 while withdrawing SSP CHPH Unit-5 as per schedule, its Y-phase circuit breaker didn't open due to which bus bar protection operated and 220 KV Bus-2 at SSP CHPH tripped along with 50 MW Unit-2 and 220 kV SSP CHPH-RBPH 2.	Tripping of 1.220 kV SSP CHPH Bus 2 2.220 kV SSP CHPH- RBPH 2 3.50 MW SSP CHPH Unit 2
11	GD-1	WR	27-Mar-21 15:01	27-Mar-21 21:59	6:58	20	-	0.03%	-	65011	53141	On 27-03-2021 at 15:01 hrs, 220kV Nanavalka (Alfanar wind)- Bhuj line tripped on B-E fault due to tree fault (due to gusty wind at near Nirona village) between tower loc no. 20 -21 without A/R attempt. Due to loss of evacuation path, 20 MW wind generation of Alfanar was lost.	Tripping of 1. 220kV Nanavalka- Bhuj
12	GI-1	WR	30-Mar-21 11:54	30-Mar-21 12:21	0:27	-	-	-	-	68081	55613	At 11:54 hrs on 30-03-2021, fault occurred at 220kV Pithampur S/s Bus-1 due to bursting of R phase CT of 220 kV Pithampur – Pithampur Section 1 line. As the bus bar protection did not operate, all the connected 220 KV lines along with the 400/220 KV ICTs tripped on backup protection to clear the fault.	Tripping of 1. 220 KV Interconnector 1 (Sec 3) 2. 220 KV Interconnector 1 (Sec 3) 3. 220 KV Pithampur – Badnagar 4.220 KV Pithampur – PithampurSec 1 5.220 KV Pithampur – Deplapur 6.315 MVA 400/220 kV ICT-1 7.315 MVA 400/220 kV ICT-2 8. 315 MVA 400/220 kV ICT-3

Details of Grid Events during the Month of April 2021 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	Budhipadar, IB thermal and Vedanta s/s.	44294.57431	44294.67153	02:20	560	100	2.34%	0.49%	23869	20357	220 KV Budhipadar-Lapanga ckt-1&2 tripped at 13:47 and 13:49 hrs respectively, followed by tripping of Budhipadar-Raigarh on 14:03 hrs, due to B phase fault with delayed clearance of 1 sec, now all the generation of that complex was being evacuated via Tarkera D/C and Korba D/C . At increased loading of Tarkera D/C , ckt 1 also developed B phase fault ,(Jumper melting as per preliminary information) at 14:06:27 Hrs and tripped . As Tarkera Ckt-1 tripped ,ckt-2 flow increased very much and at 14:07:24 Hrs with Ckt-2 a bus fault was created at BUS-1 (with snapping of R-Ph pipe bus from isolator to Breaker of 220KV Budhipadar- Tarkera Ckt-2). All the remaining feeders with Bus -1 tripped ,so with Bus bar operation Korba-2 also tripped at the same time . Now as only Korba 3 is the only available path for evacuation of all generation hence it also tripped on power swing. With all evacuating sources out ,IBTPS and Vedanta,Bhusan formed Island with its own CPP load but due to excess generation of approx. 560 Mw (Vedanta=250, IB=250 , Bhusan=50, pre event exchange with grid) over frequency occurred and also all generators tripped on Over frequency . There was 1120 MW generation loss in Vedanta 220 KV station(all 9 units of 135MW each) with 860 MW captive load loss, thus 260 MW injection loss to Gridco , 250 MW generation loss in 220 KV IB thermal station, and 50 MW injection loss from Bhushan Power and steel, 100 MW loss in local loads of Budhipadar , Jharsguda and Sundergarh. Above events led to total voltage loss in 220 KV Budhipadar, IB thermal and Vedanta s/s.	220KV-BUDHIPADAR-LAPANGA-1 220KV-BUDHIPADAR-LAPANGA-2 220KV-BUDHIPADAR-RAIGARH 220KV-BUDHIPADAR-TARKERA-1 220KV-BUDHIPADAR-TARKERA-2 220KV-BUDHIPADAR-KORBA-2 220KV-BUDHIPADAR-KORBA-3.
2	GD-1	Garwah	44294.73542	44294.83264	08:20	0	40	0.00%	0.20%	22976	19952	At 17:39 hrs 220 kV Daltongunj – Garwah 2 tripped on B-N fault and at 17:43 Hrs, ckt-1 also tripped on B-n fault with same relay indication as of ckt-2, As a result, around 40 MW load loss occurred at Garwah (Traction load of 15 MW and Domestic load of 25 MW).	220 kV Daltongunj – Garwah 1 220 kV Daltongunj – Garwah 2
3	GD-1	Rangpo, Rongnichu, Tashiding, Jorethang, New Melli, Gangtok ,Chuzachen	44294.66181	44294.70833	01:07	28	37	0.11%	0.17%	24252	20752	400/220 kV ICT 2 at Rangpo out for SF6 gas leakage rectification work in ICT-2 GIS Module. At 15:53 hrs all four running ICTs 1,3,4,5 at Rangpo tripped from HV side on backup impedance protection with inter trip to LV side. So at that time Only running unit of Tashiding 28 Mw along with 37 mw of Gangtok load islanded and did not survived due to large imbalance. Hence 28 Mw generation loss at Tashiding and 37Mw load loss at Gangtok occurred. Above events led to total voltage loss in 220 KV Rangpo, Rongnichu, Tashiding, Jorethang, New Melli and 132 KV Gangtok and 132 kV Chuzachen.	315 MVA ICT 1,3,4,5
4	GD-1	Jorethang, Tashiding, New Melli	44295.74097	44295.79583	01:19	36	0	0.14%	0.00%	25254	19105	At 17:47 hrs 220 kV Rangpo – New Melli S/C tripped from Rangpo end in Zone-1 and same fault was sensed by 220 Kv Tashding –New Melli and this line also tripped from Tashding end in zone-3 due to non-clearance of fault from New melli end. 220 kV Rangpo-Tashding S/C also tripped on the same time on R-Y phase fault encroaching the same fault from Rangpo end in Zone-3. As a result, around 36 MW generation loss occurred at Jorethang HEP due to loss of evacuation path. There was no generation at Tashiding. Delayed clearance of fault (around 800 ms) has been observed in PMU data	220KV-RANGPO-NEW MELLI-S/C 220KV-RANGPO-TASHIDING-S/C 220KV- NEW MELLI—TASHIDING S/C.
5	GD-1	Sonenegar	44301.67222	44302.68958	00:25	0	120	0.00%	0.50%	23879	20303	220KV Chandauti-Sonenager D/C tripped at 16:08 hrs led to total power failure at GSS Sonenagar (BSEB). As reported by SLDC Bihar, during relay testing of upcoming 160 MVA Transformer -3 at Sonenagar (GSS) by Siemens relay engineer, LBB protection operated which resulted tripping of both the lines. 220KV Chandauti-Sonenager D/C couldn't be restored yet due to repeated charging attempt failed at S'nagar(GSS) end	220KV-CHANDAUTI (PMTL)-SONENAGAR-1 220KV-CHANDAUTI (PMTL)-SONENAGAR-2
6	GD-1	Tashiding	44302.69861	44302.71667	00:26	0	0	0.00%	0.00%	24102	19462	220kV Tashiding substation is having only two interconnections ,220 kV Tashiding-New melli S/C and 220 kV Tashiding -Rangpo S/C. At 16:46, 220 KV New Melli- Tashiding tripped on 3 phase fault at the same time, 220 KV Rangpo-Tashiding also tripped from Rangpo end only on same 3 phase fault isolating 220 KV Tashiding station, though there was no generation loss as it had no schedule.	220KV-TASHIDING-RANGPO-1 220KV-NEW MELLI-TASHIDING-1

Details of Grid Events during the Month of April 2021 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)		
7	GD-1	Garwah	44307.65278	44307.78194	03:06	0	40	0.00%	0.19%	24776	21152	At 15:40 hrs 220 kV Daltongunj – Garwah 1 & 2 tripped on B-N fault. As a result, around 40 MW load loss occurred at Garwah (Traction load of 15 MW and Domestic load of 25 MW).	220 kV Daltongunj – Garwah 1 220 kV Daltongunj – Garwah 2
8	GD-1	Lalmatia, Godda, Sahebganj	44307.7375	44307.75069	00:19	0	120	0.00%	0.59%	24876	20399	220kV Farakka- Lalmatia, 132kV Kahalgaon (NTPC)- Lalmatia & 132kV Kahalgaon (BSPTCL)- Lalmatia tripped at 17:42 hrs. 17:52 hrs & 17:58 hrs respectively due to bad weather (storm and heavy rain). Tower collpase reported for 220 kV Godda- Lalmatia D/C and 220 kV Farakka Lalmatia S/C. At 18:08 Hrs, 132 kV Sahebganj was given power through 132 kV Rajmahal-Sahebganj ckts to feed traction supply. 132 kv Dumka-lalmatia 1 was charge to supply power to 220/132 kV Lalmatia S/C at 18:21 Hrs. At 20:05 220 kV Dumka-Godda D/C was closed at godda to supply power to 220/132 Godda.	220 kV Farakka- Lalmatia 132 kV Kahalgaon (NTPC)- Lalmatia 132 kV Kahalgaon (BSPTCL)- Lalmatia
9	GD-1	Teesta-3	44309.55625	44309.64236	02:04	148	0	0.69%	0.00%	21810	19342	4000kV Teesta-3 substation is having only two interconnections, 400 kV Teesta-3-Kishangunj S/C and 400kV Teesta-3 -Dikchu S/C. At 13:21, 400 kV Teesta-3-Kishangunj tripped on B-phase fault at the same time,400 kV Teesta-3 -Dikchu also tripped on same fault .However , voltage dip and fault current rise were low resulting in sensing of fault by Directional Earth fault. As a result, around 148 MW generation loss occurred at TEESTA III due to loss of evacuation path. There was no generation at Dikchu	400 kV TEESTA-3-KISHANGUNJ 400 kV TEESTA-3 -DIKCHU
10	GD-1	Garwah	44315.5625	44309.83958	06:39	0	35	0.00%	0.00%	24671	21090	At 12:34 hrs 220kV Daltongunj-Garwah (New) -2 tripped on B-Earth fault during restoration of said line after necessary checking (as line is frequently tripping from last few days) 220kV Daltongunj-Garwah (New)-1 also tripped on B-Earth fault at 13:30 hrs leading to power failure at 220kV Garwah substation. Around 20MW of traction load and 15 MW of New Garwah local load loss occurred. Traction load immediately shifted on Sonenagar (BSEB) source through Japla.	220 kV Daltongunj – Garwah 1 220 kV Daltongunj – Garwah 2
11	GI-2	Farakka	44315.86111	Lines under breakdown; unit 6 restored at 01:19 hrs on 30-04-21	04:39	450	0	1.67%	0.00%	26936	22248	At 20:40 Hrs, 400 KV FSTPP-Durgapur D/c, 400 KV FSTPP-New Purnea (From New Purnea end only), FSTPP U#6 tripped.Multiple faults in PMU observed.No complete blackout generation rescheduling. It was reported that 220 kV Farakka-Lalmtia S/C which was out due to tower collapse since 21 april 2021 has observed another twoer collpase near Farraka end and as it was passing above 220 kV Farakka-Durgapur D/C so resulted in the fault on these circuits.	400KV-Durgapur-FSTPP-2 400KV-New Purnea-Farakka-1 400KV-FSTPP-Durgapur-1 FSTPP Unit-6
12	GD-1	Garwah	44315.94236	44316.00694	02:03	0	20	0.00%	0.09%	27792	22543	At 22:37 Hrs, 220 KV Daltonganj-Garwah (New)-2 tripped on R-Y-Earth fault leading to power failure at 220/132 Garwah (New) S/s (220 KV Daltonganj-Garwah (New)-I was already under tripped condition). Total around 20 MW load loss occurred (including 15 MW traction loss of Garwah). Inclement weather reported around Garwah.	220 kV Daltongunj – Garwah 1 220 kV Daltongunj – Garwah 2

Details of Grid Events during the Month of April 2021 in Southern 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	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent		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	Andhra Pradesh	03-Apr-21 20:55	03-Apr-21 22:50	1hr 55mins	0	0	0.00	0.00	39532	47310	Complete Outage of 220kV VSS of APTRANSCO: Triggering incident was snapping of Earth wire of 220kV VSS Gajuwaka feeder at VSS end on Y and B phase jack bus of Bus-1 and Bus-2. This resulted in operation of Bus-1 and 2 BBP at 220kV VSS and all the connected elements got tripped including 400/220kV Gazuwaka ICT#1 and ICT#2	i. 220kV VSS-PENDURTHI 1& 2 ii. 220 kV VSS- KALPAKA 1 & 2 iii. 400/220kV Gazuwaka ICT#1 and ICT#2 iv. 220 kV VSS- KAKINADA v. 220 kV VSS- MRS 1 and 2 vi. 220 kV VSS- GAJUWAKA
2	GD-1	TamilNadu	08-Apr-21 03:29	08-Apr-21 07:18	3hr 49min	1045	0	0.03	0.00	37331	45187	Complete Outage of 230kV TTPS of TANGEDCO: During antecedent conditions, 230kV TTPS Checkanurani line was under outage and 5 units were in service with an antecedent generation of around 1000MW at TTPS. Triggering incident was tripping of 230kV TTPS TTN-2 on fault at 03:29hrs. After the tripping of this line, 230kV TTPS TTN-1 loading got increased and subsequently line tripped due jumper cut. After this event one by one all connected lines started tripping due to jumper cut issues when loading was increased. Later running units got tripped on operation of over frequency protection due to loss of evacuating lines. This resulted in complete outage of 230kV TTPS.	i. TTPS TTN Auto-1 and 2 ii. TTPS KKNPP iii. TTPS Kayathar line-1 and 2 iv. TTPS Sterlite v. TTPS Madurai vi. TTPS Kinnimangalam vii. TTPS Sipcot viii. TTPS U#1,2,3,4, and 5
3	GD-1	Kerala	15-Apr-21 14:46	15-Apr-21 03:26	51min	35	600	0.00	0.01	40107	46161	Complete loss of supply at of 220kV Edappon SS, 220kV Kundara SS, 220kV Kayamkulam GS, 220kV Punapura SS, 220kV New Pallom SS and 220kV Pallom SS of KSEB: During antecedent conditions, due to outage of 220kV Idukki New Pallom, 220kV Ambalamugal Pallom (planned outage), 220kV Sabarigiri Ambalamugal (planned outage) and 220kV Sabarigi Pallom(due to fault), 220kV Kayamkulam GS, 220kV Punapura SS, 220kV New Pallom SS and 220kV Pallom SS 220kV were radially fed from 220kV Edappon SS, 220kV Kundara SS which in turn was fed from 220kV Edamon SS.Triggering incident was fault in 220kV Edamon Kundara and 220kV Edamon Edappon (both the lines are in the same tower till certain distance). Fault distance is reported as 27KM from Edamon end. Heavy rain and lightning were reported during the event. At the same time, LBB maloperated at 220kV Edamon SS resulting in the tripping of all the elements connected to bus-1 and bus-4. Due to tripping of both incoming feeders, 220kV Edamon Kundara and 220kV Edamon Edappon, there was complete loss of supply at of 220kV Edappon SS, 220kV Kundara SS, 220kV Kayamkulam GS, 220kV Punapura SS, 220kV New Pallom SS and 220kV Pallom SS.	i.220KV Edamon Kundara ii. 220KV Edamon Pothenecode#1 iii.220KV Edamon Edappon iv.220KV Thirunelveli Edamon#1 v.200MVA Transformer at Edamon
4	GD-1	Telangana	16-Apr-21 13:37	16-Apr-21 02:21	44min	354	474	0.01	0.01	42058	47758	Complete Outage of 220kV Veltoor SS and 220kV Wanaparthy SS of TSTRANSCO, 220kV SE Solaar, 220kV RENEW Solar and 220kV Shapur Solar:Triggering incident was fault in 220kV Veltoor Wanaparthy line-2. At the same time, BBP of Bus-1 and 2 at 220kV Veltoor operated resulting in the tripping of all connected elements. Since 220kV Wanaparthy SS was radially fed from 220kV Veltoor SS during antecendent. This resulted in loss of supply at 220kV Wanaparthy SS. Due to loss of evacuvation, there was complete outage at 220kV Veltoor connected solar generators namely 220kV SE Solar, 220kV Shahpur Solar and 220kV RENEW Solar.	i.220KV Veltoor- Mahaboobnagar 1 & 2 ii.220KV Veltoor - Thimmajipeta 1 &2 iii.220KV Veltoor-Lower Jurala iv.220KV Veltoor-Upper Jurala v.220KV Veltoor- Gudipalayagattu 1 vi.220KV Veltoor-SE Solar vii. 220KV Veltoor-Transform Solar viii. 220KV Veltoor-Renew 2 ix.220KV Veltoor-Renew 1 x.400/220KV Mahaboobnagar ICT 1,2,3 and 4
5	GD-1	Karnataka	19-Apr-21 08:21	19-Apr-21 09:03	42min	0	32	0.00	0.00	38685	46584	Complete Outage of 220kV Kadra PH of KPCL and 220kV Karwar SS of KPTCL: As per the report submitted, while de-synchronising U#1, due to non opening of B-pole breaker, LBB operated resulting in the tripping of all elements connected at 220kV Kadra Bus-1. Since all elements were connected only in Bus-1 during antecedent, this resulted in complete loss of supply at 220kV Kadra PH. As 220kV Karwar SS was radially fed from 220kV Kadra PH, this further resulted in complete loss of supply at 220kV Karwar SS.	i. 220kV Kadra Kaiga ii. 220kV Kadra Kodasalli
6	GD-1	Tamilnadu	19-Apr-21 10:43	19-Apr-21 11:41	58min	0	180	0.00	0.00	44163	50035	Complete Outage of 230kV Karambayam SS of TANTRANSCO: Triggering incident was Bus-2 BBP operation at 230kV Karambyam SS due to B phase jumper cut in Bus-2 of 230kV Karaikudi line at Karambyam line. Since all elements were connected only in Bus-2 during antecedent, this resulted in complete loss of supply at 230kV Karambyam SS.	i. 230kV Karaikudi Karambyam ii. 230kV Thiruvarur Karambyam iii.230/110kV 100MVA, Transformer 1,2, &3
7	GD-1	Andhra Pradesh	21-Apr-21 21:03	02-Apr-21 22:00	57mins	420	0	0.01	0.00	33479	43536	Complete Outage of 400kV RYTPP of APGENCO: Due to subsequent tripping of connected 400kV RYTPP Kalikiri line-1 and 2 on SLG fault, there was complete loss of supply at 400kV RYTPP. Station Transformer#6 also got tripped during the event. Details are awaited.	i. 400kV RYTPP Kalikiri Line-1 and 2 ii. Station Transfomer-6
8	GI-1	Tamil Nadu	02-Apr-21 20:01	02-Apr-21 21:09	1hr 8mins	0	320	0.00	0.01	47407	57141	Tripping of 110kV Bus of 400kV/230kV/110kV Thiruvalam SS of TANTRANSCO: Triggering incident was failure of B phase CT of 110kV Thiruvalam Vellore line-1. This resulted in bus fault and 110kV BBP operated resulting in the tripping of all elements connected at 110kV Thiruvalam bus. 230kV and 400kV bus were intact during this event.	i. 110kV Vellore-1 and 2 ii. 110kV Railway-1 and 2 iii. 110kV Sugar mill iv. 110kV Karnambut v. 230/110kV Transformer 1, 2,3&4 vi. 110kV Kaveripakkam vii. 110kV MV Puram viii. Gudiyattam
9	GI-1	Tamil Nadu	03-Apr-21 00:03	03-Apr-21 00:45	42mins	0	290	0.00	0.01	47407	57141	Tripping of 110kV Bus of 400kV/230kV/110kV Sriperumbudur SS: Triggering incident was failure of R phase CT of LV side of 400kV/110kV ICT#5 at Sriperumbudur. This resulted in bus fault and 110kV BBP operated resulting in the tripping of all connected elements at 110kV Sriperumbudur bus. 230kV and 400kV bus were intact during this event.	i. 400/110kV ICT-4 at Sriperumbudur ii. 400/110kV ICT- 5 at Sriperumbudur iii. 110kV Thiruvellore iv. 110kV Mosur line#1 v. 110kV Tvkadu 1 & 2 vi. 110kV Porur 1&2 vii. 110kV Neervalur viii.110kV Stgobain
10	GI-1	Andhra Pradesh	15-Apr-21 17:30	15-Apr-21 17:45	15mins	0	0	0.00	0.00	35240	42819	Tripping of Bus-2 of 220kV Gooty SWS of APTRANSCO: Due to operation of Bus-2 BBP at 220kV Gooty SWS, all the elements connected to Bus-2 got tripped at 220kV Gooty SWS. Details are awaited.	i. 400/220kV ICT-3 and 3 at Gooty ii. 220kV Dhon line-2 iii. 220kV Ultratech Cement iv. Shahpuram v. Gooty RTSS(Railways) vi. Boyareddypalli line
11	GI-1	Andhra Pradesh	23-Apr-21 15:34	23-Apr-21 16:29	55min	0	0	0.00	0.00	36425	44402	Tripping of Bus-2 at 220kV Lower Sileru PH of APGENCO: Triggering incident was fault in 220kV KTPS Lower Sileru line-2. At the same time, 220kV Asupaka Lower Sileru line-1 also got tripped only at Lower Sileru end because of relay restarting issue. Due to tripping of both the connected lines, there was de-energization of Bus-2 at 220kV Lower Sileru PH during this event.	i. 220kV Asupaka Lower Sileru line-1 ii. 220kV KTPS Lower Sileru line-2

Details of Grid Events during the Month of April 2021 in North Eastern Region

Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD 1	PK Bari area of Tripura Power System	01-Apr-21 00:58	01-Apr-21 01:38	0:40:00	0	11	0.0	0.0	1602	1196	PK Bari area of Tripura Power System is connected with rest of NER grid through 132 kV RC Nagar-PK Bari D/C lines,132 kV PK Bari-Kumarghat Line,132 kV PK Bari-PK Bari(Sterlite) line, 132 kV PK Bari-Kamalpur line &132 kV PK Bari-Dharmanagar line. At 00:58 Hrs on 01.04.2021,132 kV RC Nagar-PK Bari D/C lines,132 kV PK Bari-Kumarghat Line,132 kV PK Bari-PK Bari(Sterlite) line, 132 kV PK Bari-Kamalpur line &132 kV PK Bari-Dharmanagar line tripped on LBB operation at PK Bari Substation. Due to tripping of these elements, PK Bari area of Tripura Power System was separated from rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV RC Nagar-PK Bari D/C lines,132 kV PK Bari-Kumarghat Line,132 kV PK Bari-PK Bari(Sterlite) line, 132 kV PK Bari-Kamalpur line &132 kV PK Bari-Dharmanagar line
2	GD 1	Udaipur area of Tripura Power System	01-Apr-21 10:47	01-Apr-21 11:38	0:51:00	0	27	0.0	0.0	1564	1580	Udaipur area of Tripura Power System is connected with rest of NER grid through 132 kV Palatana-Udaipur line. 132 kV Udaipur-Monarchak line was under forced outage. At 10:47 Hrs on 01-04-2021, 132 kV Palatana-Udaipur line tripped. Due to tripping of this elements, Udaipur area of Tripura Power System was separated from rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Palatana-Udaipur line
3	GD 1	Karong area of Manipur Power System and Wokha area of Nagaland Power System	02-Apr-21 03:24	02/Apr/21 04:35	1:11:00	0	10	0.0	0.0	1907	1377	Karong area of Manipur Power System and Wokha area of Nagaland Power System were connected with the rest of NER Grid through 132 kV Imphal(MSPCL) - Karong line, 132 kV Karong-Kohima line & 132 kV Kohima - Wokha Line. 132 kV Sanis-Wokha line was under outage since 02:50 Hrs on 02.04.2021. At 03:24 Hrs on 02.04.2021, 132 kV Imphal(MSPCL) - Karong line, 132 kV Karong-Kohima line & 132 kV Kohima - Wokha Line tripped. Due to tripping of these elements, Karong area of Manipur Power System and Wokha area of Nagaland Power System were separated from the rest of NER Grid and subsequently collapsed due to no source in these areas.	132 kV Imphal(MSPCL) - Karong line, 132 kV Karong-Kohima line & 132 kV Kohima - Wokha Line
4	GD 1	Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	05-Apr-21 00:12	05-Apr-21 00:44	0:32:00	0	15	0.0	0.0	1564	1580	Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System is connected with rest of NER grid through 132 kV Ranganadi - Ziro line. At 00:12 Hrs on 05.04.21, 132 kV Ranganadi - Ziro line tripped. Due to tripping of this element, Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh were separated from rest of NER Grid and subsequently collapsed due to no source in these areas.	132 kV Ranganadi - Ziro line
5	GD 1	Tinsukia area of Assam Power System	08-Apr-21 11:30	08-Apr-21 12:20	0:50:00	0	65	0.0	0.0	885	1975	Tinsukia area of Assam Power System is connected with rest of NER grid through 220 kV AGBPP - Tinsukia D/C Lines, 220 kV Tinsukia-NTPS line & 220 kV Tinsukia-NRPP line. At 11:30 Hrs on 08.04.21, 220 kV AGBPP - Tinsukia D/C Lines, 220 kV Tinsukia-NTPS line & 220 kV Tinsukia-NRPP lines tripped. Due to tripping of these elements, Tinsukia area of Assam Power System were separated from rest of NER Grid and subsequently collapsed due to no source in this area.	220 kV AGBPP - Tinsukia D/C Lines, 220 kV Tinsukia-NTPS line & 220 kV Tinsukia-NRPP line
6	GD 1	Kohima and Wokha area of Nagaland Power System	10-Apr-21 14:00	10-Apr-21 14:40	0:40:00	0	10	0.0	0.0	1076	2070	Kohima and Wokha areas of Nagaland Power System was connected with the rest of NER Grid through 132 kV Dimapur(PG) - Kohima, and 132 kV Sanis-Wokha Lines. 132 kV Kohima-Karong Line was under emergency shutdown. At 14:00 Hrs on 10.04.2021, 132 kV Dimapur(PG) - Kohima, 132 kV Kohima - Meluri, 132 kV Wokha-Kohima and 132 kV Sanis-Wokha Lines tripped. Due to tripping of these elements, Kohima area of Nagaland Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in these areas.	132 kV Dimapur (PG)- Kohima, 132 kV Kohima - Meluri, 132 kV Sanis-Wokha & 132 kV Wokha-Kohima line
7	GD 1	Yiangangpokpi area of Manipur Power System	12-Apr-21 01:45	12-Apr-21 02:24	0:39:00	0	17	0.0	0.0	1437	1624	Yiangangpokpi area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal(MSPCL) - Yiangangpokpi D/C Lines . 132 kV Thoubal-Kakching Line was kept open for system requirement. At 01:45 Hrs on 12.04.2021, Imphal(MSPCL) - Yiangangpokpi D/C Lines tripped. Due to tripping of these elements,Yiangangpokpi area of Manipur Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Imphal(MSPCL) - Yiangangpokpi D/C Lines

Details of Grid Events during the Month of April 2021 in North Eastern Region

Sl No.	Category of Grid Event (GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM:SS)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
8	GD 1	Yiangangpokpi area of Manipur Power System	12-Apr-21 14:08	12-Apr-21 14:19	0:11:00	0	15	0.0	0.0	1437	1981	Yiangangpokpi area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal(MSPCL) - Yiangangpokpi II Line. 132 kV Thoubal-Kakching kept open for system requiremen & 132 kV Imphal(MSPCL) - Yiangangpokpi I Line was under shutdown. At 14:08 Hrs on 12.04.2021, 132 kV Imphal(MSPCL) - Yiangangpokpi II line tripped. Due to tripping of this element, Yiangangpokpi area of Manipur Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Imphal(MSPCL) - Yiangangpokpi II Line
9	GD 1	Ningthoukhong area of Manipur Power System	13-Apr-21 15:05	13/Apr/21 15:39	0:34:00	0	35	0.0	0.0	992	2050	Ningthoukhong area of Manipur Power System was connected with the rest of NER Grid through 132kV Imphal-Ningthougkhong Line & 132 kV Loktak-Ningthougkhong Line . 132 kV Kakching - Thoubal Line was in open condition due to system requirement as well 132 kV Jiribam-Loktak Line was out due to Planned Shutdown of Jiribam Bus. At 15:05 hrs on 13.04.2021,132 kV Imphal-Loktak Line, 132kV Imphal-Ningthougkhong Line & 132 kV Loktak-Ningthougkhong Line tripped. Due to tripping of these elements,Ningthoukhong area of Manipur Power System was separated from rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Imphal-Loktak Line, 132kV Imphal-Ningthougkhong Line & 132 kV Loktak-Ningthougkhong Line
10	GD 1	132 kV Khleihriat(PG) Substation, Khleihriat(Meghalaya), NEIGRIHMS areas of Meghalaya Power System and Leska Power station	16-Apr-21 03:35	16-Apr-21 05:34	1:59:00	48	40	0.0	0.0	1361	1637	132 kV Khleihriat(PG) Substation, Khleihriat(Meghalaya), NEIGRIHMS areas of Meghalaya Power System and Leska Power station were connected with the rest of NER Grid through 132kV Khandong-Khleihriat(PG) D/C lines,132 kV Khlieriat(MePTCL)-Lumshnong, 132 kV Khlieriat(MePTCL)-Mustem & 132 kV NEHU-NEIGRIHMS lines.132 kV Badarpur-Khliehriat(PG) line under tripped conditon w.e.f. 03:17 Hrs of 16.04.21. At around 03:35 hrs on 16.04.2021,132kV Khandong-Khleihriat(PG) D/C lines,132 kV Khliehriat(MePTCL)-Mustem, 132 kV Khliehriat(MePTCL)-Lumshnong, 132 kV Khliehriat-NEIGRIHMS & 132 kV NEIGRIHMS-NEHU tripped. Due to tripping of these elements, 132 kV Khleihriat(PG) Substation, Khleihriat(PG) and NEIGRIHMS areas of Meghalaya Power System and Leska Power station were separated from rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas.	132kV Khandong-Khleihriat(PG) D/C lines,132 kV Khliehriat(MePTCL)-Mustem, 132 kV Khliehriat(MePTCL)-Lumshnong, 132 kV Khliehriat-NEIGRIHMS & 132 kV NEIGRIHMS-NEHU line
11	GD 1	Yiangangpokpi area of Manipur Power System	19-Apr-21 16:52	19-Apr-21 16:59	0:07:00	0	24	0.0	0.0	1691	1957	Yiangangpokpi area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal(MSPCL) - Yiangangpokpi D/C Lines. 132 kV Thoubal-Kakching Line was kept open for system requirement. At 16:52 Hrs on 19.04.2021, Imphal(MSPCL) - Yiangangpokpi D/C Lines tripped. Due to tripping of these elements,Yiangangpokpi area of Manipur Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Imphal(MSPCL) - Yiangangpokpi D/C Lines
12	GD 1	Along area of Arunachal Pradesh Power System	23-Apr-21 15:32	23-Apr-21 16:02	0:30:00	0	12	0.0	0.0	1255	2159	Along area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Daporijo-Along line. At 15:32 Hrs on 23.04.2021, Daporijo-Along line tripped. Due to tripping of this element, Along area of Arunachal Pradesh Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area.	132 kV Daporijo-Along line
13	GD 1	Dikshi HEP and Khupi area of Arunachal Pradesh Power System	25-Apr-21 03:36	25-Apr-21 04:00	0:24:00	3	17	0.0	0.0	997	1837	Dikshi HEP and Khupi area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Balipara - Tenga line. At 03:36 Hrs on 25.04.2021, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Dikshi HEP and Khupi area of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to load generation mismatch in this area.	132 kV Balipara-Tenga Line
14	GD 1	Dikshi HEP and Khupi area of Arunachal Pradesh Power System	27-Apr-21 11:49	27-Apr-21 12:19	0:30:00	3	16	0.0	0.0	1135	2137	Dikshi HEP and Khupi area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Balipara - Tenga line. At 11:49 Hrs on 27.04.2021, 132 kV Balipara - Tenga line & 132 kV Tenga- Khupi T/L tripped. Due to tripping of this element, Dikshi HEP and Khupi area of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to load generation mismatch in this area.	132 kV Balipara - Tenga line
15	GD 1	Rokhia area of Tripura Power System	30-Apr-21 16:15	30-Apr-21 16:38	0:23:00	55	16	0.0	0.0	1515	2049	Rokhia area of Tripura Power System was connected with the rest of NER Grid through 132 kV Agartala - Rokhia D/C Lines and 132 kV Monarchak - Rokhia Line. At 16:15 Hrs on 30.04.2021, 132 kV Agartala - Rokhia D/C Lines and 132 kV Monarchak - Rokhia Line tripped. Due to tripping of these elements, Rokhia area of Tripura Power System was separated from the rest of NER Grid and subsequently collapsed due to load generation mismatch in this area.	132 kV Agartala - Rokhia D/C Lines 132 kV Monarchak - Rokhia Line Rokhia Unit 7 Rokhia Unit 8 Rokhia Unit 9
16	GI 2	Tripura Power System	01-Apr-21 10:42	01-Apr-21 12:30	1:48:00	317	0	0.3	0.0	1091	1555	Palatana Unit 1 & 2 tripped at 10:42 hours on 01-04-21 due to Loss of Flame. Revision done from Block No. 51 on 01-04-21	Palatana unit 1 & 2

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
17	GI 2	Assam Power System	18-Apr-21 06:42	18-Apr-21 07:30	0:48:00	317	0	0.3	0.0	1204	1546	BgTPP Unit 2 tripped at 06:42 hours on 18-04-21 due to Low Vacuum in Turbine Condenser. Revision done from Block No. 31 on 18-04-21	BgTPP Unit 2
18	GI 1	Tripura Power System	18-Apr-21 10:42	18-Apr-21 12:30	1:48:00	25	0	0.0	0.0	882	1583	AGTCCPP Unit 4 tripped at 10:42 hours on 18-04-21 due to Control system malfunction. Revision done from Block No. 51 on 18-04-21	AGTCCPP Unit 4
19	GI 1	Tripura Power System	21-Apr-21 07:39	21-Apr-21 09:00	1:21:00	30	0	0.0	0.0	1275	1866	AGTCCPP Unit 4 tripped at 07:39 hours on 21-04-21 due to control system malfunction. Revision done from Block No. 37 on 21-04-21	AGTCCPP Unit 4
20	GI 2	Assam Power System	22-Apr-21 00:15	22-Apr-21 01:52	1:37:00	59	0	0.1	0.0	827	1854	AGBPP Unit 1 & Unit 3 tripped at 00:15 hours on 22-04-21 due to LBB Operation. Revision done from Block No. 09 on 22-04-21.	AGBPP unit 1 & unit 3
21	GI 2	Assam Power System	23-Apr-21 23:15	24-Apr-21 00:50	1:35:00	9	0	0.0	0.0	1008	2062	AGBPP Unit 8 tripped at 23:15 hours on 23-04-21 due to Problem in Boiler CEP. Revision done from Block No. 05 on 24-04-21.	AGBPP unit 8
22	GI 2	Assam Power System	24-Apr-21 12:28	24-Apr-21 14:00	1:32:00	128	0	0.2	0.0	812	1991	BGTPP Unit 3 tripped at 12:28 hours on 24-04-21 due to Problem in Boiler CEP. Revision done from Block No. 57 on 24-04-21.	BGTPP unit 3
23	GI 1	Tripura Power System	26-Apr-21 19:12	26-Apr-21 21:00	1:48:00	19	0	0.0	0.0	2227	2845	AGTCCPP Unit 3 tripped at 19:12 hours on 26-04-21 due to stator earth fault. Revision done from Block No. 85 on 26-04-21.	AGTCCPP unit 3