

Details of Grid Events during the Month of November 2020 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	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	J & K	03-Nov-2020 09:09	03-Nov-2020 11:52	2:43	0	850	0.000	1.867	29221	45524	220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 tripped due to the sever fault on 220kV Zainkote-Alusteng line got reflected on 220 kv zainkote. As per PMU, B-N fault with delayed clearance of 960ms is observed. Fault current was 1.46kA and fault distance was 69.02km from Wagoora(PG) end. As per SCADA, load loss of approx. 850MW is observed. In antecedent condition, 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 carrying 159MW & 134MW respectively.	1) 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-2 2) 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1
2	GI-2	UTTAR PRADESH	03-Nov-2020 11:13	03-Nov-2020 14:08	2:55	0	0	0.000	0.000	28958	44748	400/220 kv 315 MVA ICT 1 & ICT 2 at Paricha(UPUN)tripped on electrical jerk due to tripping of 220 kv Parichha-Dunara Ckt-2. At the same time 400kv Paricha-ORAI Ckt-1 also tripped. As per PMU, B-N fault is observed. Fault current was 2.319kA. In antecedent condition, 400/220 kv 315 MVA ICT 1, ICT 2 & 400KV Paricha-ORAI Ckt-1 carrying 7MW each.	1) 400/220 kv 315 MVA ICT 1 at Paricha(UPUN) 2) 400/220 kv 315 MVA ICT 2 at Paricha(UPUN)
3	GD-1	RAJASTHAN	03-Nov-2020 12:10	03-Nov-2020 12:56	0:46	0	630	0.000	1.430	28798	44054	400/220 kv 315 MVA ICT 1 & ICT 2 at Hindaun(RS) tripped along with 220 KV Hindaun- Mandawar line. As per PMU, no fault is observed. Transformer tripped due to overloading as 220KV Bharatpur-Agra and 220KV DAUSA-MANDAWAR line is in open condition and load of 220KV Nadbai shifted at 400KV GSS Hindaun via Chhokarwara. As per SCADA, load loss of approx. 630MW is observed. In antecedent condition, 400/220 kv 315 MVA ICT 1 & ICT 2 at Hindaun(RS) carrying 286MW & 263MW respectively.	1) 400/220 kv 315 MVA ICT 1 at Hindaun(RS) 2) 400/220 kv 315 MVA ICT 2 at Hindaun(RS)
4	GD-1	J & K	03-Nov-2020 13:26	03-Nov-2020 15:52	2:26	0	400	0.000	0.986	27150	40566	220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 tripped due to R-N Phase to earth fault in 220kV Zainkote-Alusteng line. As per PMU, R-N fault with delayed clearance of 1720ms is observed. Fault current was 1.004kA. As per SCADA, load loss of approx. 400MW is observed. In antecedent condition, 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 carrying 111MW & 85MW respectively.	1) 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-2 2) 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-1
5	GD-1	UTTAR PRADESH	03-Nov-2020 20:04	03-Nov-2020 21:33	1:29	660	0	2.481	0.000	26598	38408	765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 tripped due to Y-N Phase to earth fault. At the same time, 660MW Lalitpur TPS - UNIT 3 also tripped due to tripping of 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2. As per PMU, no fault is observed. As per SCADA generation loss of 660MW observed during tripping.	1) 765 KV Agra Fatehabad(UP)-Lalitpur(LPG) (UP) Ckt-2 2) 660 MW Lalitpur TPS - UNIT 3
6	GD-1	RAJASTHAN	07-Nov-2020 15:08	07-Nov-2020 19:40	4:32	0	60	0.000	0.153	25438	39140	220 KV Neemrana(PG)-Kushkhera(RS) (RS) Ckt-1 & 220KV Neemrana(PG)-Bahror(RS) (RS) Ckt-1 tripped from Neemrana end due to 220KV Behror line bay LBB operation. At the same time, 220KV Bus 1 & 400/220 kv 500 MVA ICT 1 at Neemrana(PG) also tripped due to bus bar protection operation. As per PMU, no fault is observed. In antecedent condition, 400/220 kv 500 MVA ICT 1, 220 KV Neemrana(PG)-Kushkhera(RS) (RS) Ckt-1 & 220KV Neemrana(PG)-Bahror(RS) (RS) Ckt-1 carrying 193MW, 64MW & 66MW respectively.	1) 220 KV Neemrana(PG)-Kushkhera(RS) (RS) Ckt-1 2) 220KV Bus 1 at Neemrana(PG) 3) 400/220 kv 500 MVA ICT 1 at Neemrana(PG) 4) 220 KV Neemrana(PG)-Bahror(RS) (RS) Ckt-1
7	GI-2	UTTAR PRADESH	11-Nov-2020 01:07	11-Nov-2020 02:51	1:44	0	0	0.000	0.000	21727	32101	400kv Rewa Road-Panki (UP) Ckt-1 & 400KV Obra_B-Rewa Road (UP) Ckt-1 tripped on R-N phase to earth fault. As per PMU, R-N fault is observed. Fault current was 1.33kA, fault distance was 39km from Obra end. In antecedent condition, 400KV Rewa Road-Panki (UP) Ckt-1 & 400KV Obra_B-Rewa Road (UP) Ckt-1 carrying 145MW & 170MW respectively.	1) 400 KV Rewa Road-Panki (UP) Ckt-1 2) 400 KV Obra_B-Rewa Road (UP) Ckt-1
8	GD-1	HIMACHAL PRADESH	11-Nov-2020 07:06	11-Nov-2020 09:06	2:00	0	50	0.000	0.126	28308	39744	220 KV Dehar(BB)-Kangoo(HP) (HP) Ckt-1, 220 KV Dehar-Ganguwal (BB) Ckt-1 & Ckt 2 tripped due to operation of 220kV bus-bar protection at Dehar(BBMB). As per PMU, no fault is observed. In antecedent condition, 220 KV Dehar(BB)-Kangoo(HP) (HP) Ckt-1, 220 KV Dehar-Ganguwal (BB) Ckt-1 & Ckt-2 carrying 64MW, 55MW & 55MW respectively.	1) 220 KV Dehar(BB)-Kangoo(HP) (HP) Ckt-1 2) 220 KV Dehar-Ganguwal (BB) Ckt-2 3) 220 KV Dehar-Ganguwal (BB) Ckt-1
9	GD-1	UTTRAKHAND	15-Nov-2020 12:03	15-Nov-2020 15:48	3:45	53	0	0.205	0.000	25900	35982	220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1 & 220 KV Tanakpur(NH)-CB Ganj(UP) (PG) Ckt-1 tripped due to over voltage. At the same time Tanakpur(NH) Unit-1&2 also got tripped. As per PMU, no fault is observed. In antecedent condition, 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1, 220 KV Tanakpur(NH)-CB Ganj(UP) (PG) Ckt-1, Tanakpur(NH) Unit-1&2 carrying 45MW, 8MW, 34MW & 19MW respectively.	1) 220 KV Tanakpur(NH)-Sitarganj(PG) (PG) Ckt-1 2) 220 KV Tanakpur(NH)-CB Ganj(UP) (PG) Ckt-1
10	GI-2	PUNJAB	15-Nov-2020 15:00	15-Nov-2020 16:23	1:23	0	0	0.000	0.000	21659	29476	400 KV Nakodar(PSG)-Moga(PG) (PS) Ckt-1 & 400 KV Kishenpur-Moga (PG) Ckt-1 tripped due to over voltage. At the same time 765/400 kv 1500 MVA ICT 2 at Moga(PG) & 400KV Bus 2 at Moga(PG) tripped due to LBB operation at MOGA end. 400 KV Rajpura-Dhuri (PS) Ckt-2 & 400 KV Rajpura TPS(PSG)-Rajpura(PS) (PS) Ckt-2 also tripped at same time due to over voltage. As per PMU, no fault is observed. In antecedent condition, 400 KV Nakodar(PSG)-Moga(PG) (PS) Ckt-1, 400 KV Kishenpur-Moga (PG) Ckt-1, 765/400 kv 1500 MVA ICT 2 at Moga(PG), 400 KV Rajpura-Dhuri (PS) Ckt-2 & 400 KV Rajpura TPS(PSG)-Rajpura(PS) (PS) Ckt-2 carrying 253MW, 245MW, 620MW, 29MW & 29MW respectively.	1) 765/400 kv 1500 MVA ICT 2 at Moga(PG) 2) 400 KV Rajpura-Dhuri (PS) Ckt-2 3) 400 KV Nakodar(PSG)-Moga(PG) (PS) Ckt-1 4) 400KV Bus 2 at Moga(PG) 5) 400 KV Kishenpur-Moga (PG) Ckt-1 6) 400 KV Rajpura TPS(PSG)-Rajpura(PS) (PS) Ckt-2

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
11	GI-2	PUNJAB	15-Nov-2020 16:01	15-Nov-2020 17:18	1:17	0	0	0.000	0.000	20005	27983	400 KV Moga-Jalandhar(PG) Ckt-2 & 400 KV Kishenpur-Moga (PG) Ckt-2 tripped due to over voltage. At the same time 400 KV Moga-Hissar (PG) Ckt-3 also tripped because it was on same dia and Bus-2 at Moga was already under tripping due to relay maloperation. As per PMU, B-N fault is observed. In antecedent condition, 400 KV Moga-Jalandhar(PG) Ckt-2, 400 KV Kishenpur-Moga (PG) Ckt-2 & 400 KV Moga-Hissar (PG) Ckt-3 carrying 318MW, 245MW & 113MW respectively.	1) 400 KV Moga-Hissar (PG) Ckt-3 2) 400 KV Moga-Jalandhar (PG) Ckt-2 3) 400 KV Kishenpur-Moga (PG) Ckt-2
12	GI-2	UTTAR PRADESH	15-Nov-2020 20:03	15-Nov-2020 23:55	3:52	0	0	0.000	0.000	24766	30383	400/220 kv 315 MVA ICT-1& ICT-2 at Mathura(UP) tripped due to over flux. At the same time 220kv Mathura-Chata ckt-1 also got tripped. As per PMU, no fault is observed. Fault over flux was 1.10pu. In antecedent condition, 400/220 kv 315 MVA ICT-1, ICT-2 & 220kv Mathura-Chata ckt-1 carrying 4MW, 4MW & 11MW respectively.	1) 400/220 kv 315 MVA ICT 1 at Mathura(UP) 2) 400/220 kv 315 MVA ICT 2 at Mathura(UP)
13	GD-1	UTTAR PRADESH	16-Nov-2020 04:45	16-Nov-2020 08:01	3:16	71	0	0.461	0.000	15408	21521	400 KV Alaknanda GVK(UPC)-Vishnuprayag(IP) (UP) Ckt-1 & 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1 tripped due to over voltage. At the same time Alaknanda(UP) Unit-1 also tripped. As per PMU, no fault is observed. In antecedent condition, 400 KV Alaknanda GVK(UPC)-Vishnuprayag(IP) (UP) Ckt-1, 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1 & Alaknanda GVK(UPC)Unit-1 carrying 19MW, 10MW & 71MW respectively.	1) 400 KV Alaknanda GVK(UPC)-Vishnuprayag(IP) (UP) Ckt-1 2) 400 KV Alaknanda GVK(UPC)-Srinagar(UK) (UK) Ckt-1
14	GI-2	HIMACHAL PRADESH	19-Nov-2020 13:47	19-Nov-2020 15:13	1:26	0	0	0.000	0.000	24121	37369	220 KV Phozal(HP)-Nallagarh(PG) tripped due to B-N fault. Fault Current: 1.5 kA and fault distance: 170km from Nalagarh towards Phozal end. At the same time, 220 KV AD hydro(AD)-Phozal(HP) & 220 KV AD hydro(AD)-Nallagarh(PG) tripped due to over voltage. As per PMU, Y-B fault is observed. In antecedent condition, 220 KV AD hydro(AD)-Phozal(HP) & 220 KV AD hydro(AD)-Nallagarh(PG) carrying 6MW each.	1) 220 KV AD hydro(AD)-Phozal(HP) (ADHPL) Ckt-1 2) 220 KV Phozal(HP)-Nallagarh(PG) (ADHPL) Ckt-1 3) 220 KV AD hydro(AD)-Nallagarh(PG) (ADHPL) Ckt-1
15	GI-2	HARYANA	21-Nov-2020 13:09	21-Nov-2020 14:30	1:21	0	0	0.000	0.000	24400	38175	800 KV HVDC Kurukshetra(PG) Pole-2,3 & 4 blocked due to control mal-operation during power ramp down (from 3000 MW to 1700 MW). During power ramp-down AC Bus voltage soared up to the level of around 434kV. At this voltage TOVC operated and one AC filter switched out. At the same time Pole-3 blocked due to control mal-operation. As per PMU, no fault is observed. In antecedent condition, 800kv HVDC Kurukshetra(PG) Pole-2,3 & 4 carrying 750MW each.	1) 800 KV HVDC Kurukshetra(PG) Pole-03 2) 800 KV HVDC Kurukshetra(PG) Pole-4 3) 800 KV HVDC Kurukshetra(PG) Pole-2
16	GI-2	RAJASTHAN	23-Nov-2020 09:10	23-Nov-2020 10:24	1:14	0	0	0.000	0.000	27910	43922	220 KV Bhilwara(RS)-Kota(PG) (RS) Ckt-1 tripped due to snapping of R-ph jumper. Fault current was 1.6kA and fault distance was 132.5km from Kota(PG) end. At the same time, 400/220 kv 315 MVA ICT 2 at Bhilwara(RS) also tripped due to buchholz relay operation. As per PMU, R-N fault is observed. In antecedent condition 400/220 kv 315 MVA ICT 2 at Bhilwara(RS) carrying 217MW.	1) 400/220 kv 315 MVA ICT 2 at Bhilwara(RS) 2) 220 KV Bhilwara(RS)-Kota(PG) (RS) Ckt-1
17	GI-2	HIMACHAL PRADESH	24-Nov-2020 17:22	24-Nov-2020 18:31	1:09	0	0	0	0	28060	39989	400KV Bus 1 at Parbati Pooling Banala(PG), 400 KV Amritsar-Parbati Pooling Banala (PG) Ckt-1, 400/220 kv 315 MVA ICT 1 at Parbati Pooling Banala(PG) & 400KV Nallagarh(PG)-Parbati Pooling Banala(PG) (PKTCL) Ckt-1 all tripped due to 400KV Bus -1 Bus Bar protection operated due to flash over in Bus Isolator at Banala. As per PMU, Y-N fault is observed. In antecedent condition, 400 KV Amritsar-Parbati Pooling Banala (PG) Ckt-1, 400/220 kv 315 MVA ICT 1 at Parbati Pooling Banala(PG) & 400KV Nallagarh(PG)-Parbati Pooling Banala(PG) (PKTCL) Ckt-1 carrying 112MW, 41MW & 166MW respectively.	1) 400 KV Nallagarh(PG)-Parbati Pooling Banala(PG) (PKTCL) Ckt-1 2) 400/220 kv 315 MVA ICT 1 at Parbati Pooling Banala(PG) 3) 400 KV Amritsar-Parbati Pooling Banala (PG) Ckt-1 4) 400KV Bus 1 at Parbati Pooling Banala(PG)

Details of Grid Events during the Month of November 2020 in Western Region

Sl No.	Category of Grid Event (GI Ior 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)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-1	WR	02-Nov-20 16:23	02-Nov-20 16:51	0:28	-	-	-	-	62912	52436	At 1623hrs on 2nd Nov 2020, Y phase jumper of 220 kV Asoj- Jhambuva 2 broke at 400/220 kV Asoj S/s, fell down and created Y phase fault in 220 kV Bus 2. 220 kV Bus coupler tripped on over current protection operation and all the 220 kV lines connected tripped from remote end on Zone 2 distance protection operation. 400/220 kV Asoj ICTS 1,2&3 and 220/132 kV Asoj ICTS 2,3A & 4 tripped on backup protection operation. As reported by GETCO, Bus bar protection failed to operate due to topological error(wrong isolator status of 220/66kV ICT 1) in Zone 2 of Busbar protection.	Tripping of 1. 220 kV Asoj-Chandrapura 1&2 2. 220 kV Asoj-Jhambuva 1&2 3. 220 kV Asoj-Wanakbori 4. 220 kV Asoj-Vyankatpura 5. 400/220 kV Asoj ICTS 1,2&3 6. 220/132 kV Asoj ICTS 2,3A & 4
2	GI-2	WR	06-Nov-20 4:57	06-Nov-20 7:39	2:42	-	-	-	-	55608	43248	At 0457hrs on 6th Nov 2020, 765 kV side B phase CT of 765/400 kV ICT 1 failed at 765/400 kV Indore S/s, and created B-phase fault. 765 kV Bus 2 tripped on bus bar protection operation and 765/400 kV Indore ICT 1 tripped on differential protection operation.	Tripping of 1. 765/400 kV Indore ICT1 2. 765 kV Indore Bus 2
3	GI-2	WR	10-Nov-20 15:46	10-Nov-20 16:53	1:07	-	-	-	-	65329	53846	At 400/220 kV Karad S/s, 400kV Lonikhand line was under outage for changing CT ratio. At 15:46 hrs, on 10th Nov 2020 while shorting B phase CT (core 1) secondary terminal as per general practice (before changing the CT ratio) , reverse zone distance protection of Karad-Lonikhand line operated and at the same time all the elements connected to 400 kV Karad Bus 1 also tripped on busbar protection operation. As reported by MSETCL, the control cable from Lonikhand bay to control room is 0.75km long and the maloperation was due to induced voltage in the control cable causing induced current in the secondary circuit.	Tripping of 1. 400 kV Karad Bus 1 2. 400/220 kV Karad ICT 3 3. 400 kV Karad-Kolhapur-1 4. 400 kV Karad-New Koyna 2
4	GI-1	WR	14-Nov-20 21:39	14-Nov-20 22:01	0:22	-	290	-	0.804%	46868	36078	At 2139hrs on 14th Nov 2020, 132 kV side R ph CT of 220/132 kV ICT-2 blasted at 220/132kV Satna S/s and 220/132 kV ICTS 1,2&3 tripped. At the same time, 220 kV Satna(PG) 3 line tripped at Satna(MP) end only.	Tripping of 1. 220 kV Satna(MP)-Satna(PG) 3 2. 220/132 kV Satna ICTS 1,2&3
5	GI-1	WR	15-Nov-20 2:50	15-Nov-20 3:42	0:52	258	-	0.603%	-	42778	35040	At 0250hrs on 15th Nov 2020, At 220 kV Khaparkheda Power station, 220 kV side R phase bushing of GT-3 blasted. This resulted in tripping of GT-3 on differential protection operation and 220 kV Bus 1 on LBB operation of GT-3 bay. As reported by MSETCL, LBB of GT-3 bay operated instantaneously even though the fault was cleared by differential protection operation.	Tripping of 1. 220 kV Khaparkheda- Butibori 2. 220 kV Khaparkheda- Khaparkheda 1 3. 220 kV Khaparkheda- Koradi 4. 220 kV Khaparkheda- Suryalakshmi 5. Khaparkheda Units 1,3&4
6	GI-2	WR	21-Nov-20 13:10	21-Nov-20 13:59	0:49	-	-	-	-	61444	51362	At 13:10 Hrs, on 21st Nov 2020, 800 kV Champa-Kurukshehra Poles 3&4 blocked on Category A protection operation due to 'filter switch-in inhibit' at Kurukshehra end. At the same time Pole 2 blocked on Category B protection operation initiated by Pole 4 as the Neutral Bus Switch (NBS) failed to open at Champa end	Tripping of 1. 800 kV HVDC Champa-Kurukshehra Poles 2,3&4

Details of Grid Events during the Month of November 2020 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	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
	(GI 1 or 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-2	Alipurduar	07-11-2020 11:04	07-11-2020 13:49	02:45	240	0	1.15%	0.00%	20786	14743	On 07-11-2020, 400 kV Alipurduar Jigmelling D/C tripped on R and Y phase fault resulting tripping of both running units at Mangdechu due to loss of evacuation path. Fault location was around 200 km from Alipurduar.	400 kV Alipurduar - Jigmelling D/C
2	GD-1	Hatia	13-11-2020 14:36	13-11-2020 15:03	00:27	54	240	0.27%	1.80%	19673	13336	On 13th November 2020 at 14:36 hrs, B phase CT at Hatia end of 220 kV Ranchi Hatia – 3 blast resulted in tripping of 220 kV Ranchi Hatia – 1 and 2 from Ranchi end and 220 kV Patratu – Hatia D/C from Patratu end. 220/132 kV 150 MVA ICT – 3 Hatia also tripped at same time. 220/132 kV ICT – 1 & 2 and 220 kV Ranchi – Hatia – 1 & 2 were hand tripped at Hatia end after the event. As a result total power failure occurred at 220/132 kV Hatia S/S.	220 kV Ranchi – Hatia 1 & 2 220 kV Patratu – Hatia D/C 220/132 kV 150 MVA ICT – 3
3	GD-1	Dehri	24-11-2020 18:28	24-11-2020 19:11	00:43	0	154	0.00%	0.90%	23819	17120	220 kV Gaya-Dehri D/C was under shutdown prior to the event. On 24th November 2020 at 18:28 hrs, tripping of 220 kV Sasaram – Dehri S/C resulted in total power failure at Dehri, Bikramganj, Banjari, Kudra, Kerpa, Tiro areas.	220 kV Sasaram Dehri S/C

Details of Grid Events during the Month of November 2020, in Southern Region

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	ANDHRA PRADESH	07-Nov-20 16:06	07-Nov-20 16:18	12 min	0	153	0	0.4	34403	39269	Complete Outage of 220kV VSS and 220kV Parawada SS of APTRANSCO: Triggering incident was failure of R-Ph LA of 220kV VSS-Gajuwaka_AP line. Due to non tripping of line at 220kV VSS end, fault was cleared by tripping of all connected elements at remote end. This resulted in complete loss of supply at 220kV VSS. Since 220kV Parawada was radially fed from 220kV VSS, there was complete loss of supply at 220kV Parawada SS.	i. 400kV/220kV ICT#1 and 2 at Gajuwaka ii. 220kV Kalapaka line-1 and 2 iii. 220kV Gajuwaka iv. 220kV Gangavaram v. 220kV Kakinada vi. 220kV Pendurthy line-1 and 2 vii. 220kV MRS line-1 and 2
2	GD-1	TAMIL NADU	12-Nov-20 12:03	12-Nov-20 12:58	56 min	42	0	0.1	0	37004	42045	Complete Outage of 230kV Betam Wind Energy: Triggering incident was tripping of 230kV Betam TTGS Line on operation of OV s1-1 protection at Betam end. Due to tripping of single connected line, there was complete loss of supply at 230kV Betam Wind Energy resulting in wind generation loss of 42MW	i. 230kV/33kV Transformer-1 and 2 ii. 230kV TTGS line
3	GD-1	TAMIL NADU	13-Nov-20 3:09	13-Nov-20 3:40	31 min	210	0	0.9	0	24241	29972	Complete Outage of 230kV MAPS of NPCIL: As per the information received, all connected lines got tripped at 230kV MAPS due to BBP operation resulting in complete loss of supply. Details are awaited.	i. U#2 at MAPS ii. 230kV Echur line iii. 230kV SP Koll line-1 and 2 iv. 230kV Acharakkamm line
4	GD-1	TAMIL NADU	16-Nov-20 13:25	16-Nov-20 14:16	51 min	0	0	0.0	0	30689	35308	Complete Outage of 230kV Checkanurani SS of TANTRANSCO: Triggering incident was failure of R phase CB limb of 230kV Checkanurani Nallamanayakkanpatti line at Checkanurani end. LBB of 230kV Checkanurani Nallamanayakkanpatti line operated at 230kV Checkanurani end resulting in the operation of Bus-1 BBP. Due to this, all connected elements at 230kV Checkanurani SS got tripped since all the elements were connected only to Bus-1 during antecedent conditions.	i. 400kV/230kV ICT#1, 2 and 3 at Madurai ii. 230kV Pasumalai iii. 230kV Thesi iv. 230kV Kinnimangalam v. 230kV Nallamanayakkanpatti vi. 230kV Renganathapuram vii. 230kV Sembatty viii. 230kV TTPS ix. 230kV Ind Bharat x. 230kV Kayathar xi. 230kV Savasapuram xii. 230kV Amuthapuram 2
5	GD-1	KERALA	17-Nov-20 12:41	17-Nov-20 13:44	1 hr 3 min	0	390	0.0	1.1	33499	35840	Complete Outage of 220kV Kalamasherry SS of KSEB: During antecedent conditions, due to outage of 220kV Kalamasherry Idukki line-1 and 2, 220kV Kalamasherry SS was radially fed from 400kV/220kV Kochi_PG SS and flows in 220kV Kochi_PG Kalamasherry line-1 and 2 were around 195MW each respectively. As per the report submitted, triggering incident was B phase to Earth fault in 220kV Kochi_PG Kalamasherry line-1. After the tripping of 220kV Kochi_PG Kalamasherry line-1, 220kV Kochi_PG Kalamasherry line-2 got overloaded. 220kV Kochi_PG Kalamasherry line-2 got tripped on operation of DEF protection as per IDMT curve at Kochi_PG end and was holding at Kalamasherry end.	i. 220kV Kochi Kalamasherry line-1 and 2 ii. 220kV/110kV Transformer-1, 2, 3 and 4
6	GD-1	TAMIL NADU	25-Nov-20 22:53	26-Nov-20 3:22	4 hr 30 min	0	70	0.0	0.2	23960	29443	Complete Outage of 230kV BHAVINI: As per the information received, all connected lines got tripped only at Bhavini end due to Over voltage resulting in complete loss of supply. Details are awaited.	i. 230kV Kancheepuram line-1 and 2 ii. 230kV Arani line-1 and 2 iii. 230kV Siruseri line-1 and 2 iv. Station Transformer -1 and 2
7	GI-1	ANDHRA PRADESH	02-Nov-20 22:27	02-Nov-20 23:26	59 min	0	128	0.0	0.3	30583	37216	Tripping of 220kV Bus-1 and Bus-2 at Nellore SS of APTRANSCO: As per the information received, 220kV Bus-1 and Bus-2 BBP operated resulting in the tripping of all connected elements at 220kV Nellore SS. 400kV/220kV ICT#1, 2 and 3 at Nellore also got tripped during this event. Details are awaited.	i. 400kV/220kV ICT#1, 2 and 3 at Nellore ii. 220kV Manubolu line-1, 2 and 3 iii. 220kV/132kV Transformer-1, 2 and 3 iv. 220kV Sullurpet line-1, 2 and 3 v. 220kV Rachaguneri line-1 and 2
8	GI-1	TELANGANA	10-Nov-20 1:13	10-Nov-20 17:28	16 hr 15 min	0	0	0.0	0.0	23781	30069	Tripping of Bus-1 at 220kV Narsapur SS of TSTRANSCO: Triggering incident was failure of Y-Phase Suspension insulator string on LV side of Narsapur ICT-1 near 220kV Bus-1. Bus-1 BBP operated resulting in the tripping of all the elements connected to Bus-1 at 220kV Narsapur SS.	i. 400kV/220kV ICT#1 and 3 at Narsapur ii. 220kV Meenajpet line-1 iii. 220kV/132kV Transformer-1
9	GI-1	ANDHRA PRADESH	16-Nov-20 20:26	16-Nov-20 21:13	47 min	0	0	0.0	0.0	25794	33181	Tripping of 220kV Bus-2 at Srisaillam Right Bank of APGENCO: Triggering incident was failure of CB of U#5 at Srisaillam RB. LBB operated resulting in the tripping of all the elements connected to Bus-2 at Srisaillam RB. There was no generation at Srisaillam RB during antecedent conditions.	i. U#5 at Srisaillam RB ii. 220kV Dindi line iii. 220kV/Somayajulapaali line iv. 220kV Mydukur line v. 220kV Podili line vi. 220kV Talapalli line-2
10	GI-1	TAMIL NADU	17-Nov-20 0:01	17-Nov-20 0:52	51 min	0	0	0.0	0.0	22756	28506	Tripping of Bus-1 at 230kV Trichy TN SS of TANTRANSCO: Triggering incident was BN fault in 230kV Trichy TN Alandur line-1. Due to non opening of breaker at 230kV Trichy TN end, LBB operated resulting in the tripping of all the elements connected to Bus-1 at 230kV Trichy TN SS.	i. 230kV/110kV Transformer-1, 2 and 3 ii. 230kV Alandur line-1 and 2 iii. 230kV Jambunathapuram
11	GI-1	TELANGANA	26-Nov-20 7:57	26-Nov-20 9:55	1 hr 58 min	0	0	0.0	0.0	26925	33478	Tripping of 220kV Bus-2 at Shankarapalli SS of TSTRANSCO: Triggering incident was failure of R phase CB of 220kV Shanakarapalli Parigi line-1 at Shanakarapalli end. LBB operated resulting in the tripping of all the elements connected to Bus-2 at Shankarapalli SS.	i. 400kV/220kV ICT#2 and 4 at Shankarapalli ii. 220kV Sadhashivpeta line-2 iii. 220kV Yedumyaram line-2 iv. Gachuboli line-1 v. 220kV Tandur line vi. 220kV Parigi line-1
12	GI-2	KARNATAKA	29-Nov-20 13:16	29-Nov-20 13:52	36 min	1690	0	5.3	0.0	31795	34084	Multiple Tripping at 400kV Jindal TPS of JSWEL and 400kV BTPS of KPCL : Units 1,3,4 and 5 at Jindal TPS (780 MW) tripped due to flash over in GIS Chamber and Units#1 and 2 at BTPS (906 MW) tripped due to electrical side problem. Complete Generation loss of 1690 MW. 400kV Jindal - BTPS , 400kV Jindal - BPS -1, 400kV Jindal - Guttur and 400kV BTPS - Hiriyur -1 also got tripped during this event. Details are still awaited.	i. 400kV Jindal BTPS line ii. 400kV Jindal BPS line-1 iii. 400kV Jindal Guttur line iv. 400kV BTPS Hiriyur line-1 v. U#1, 3, 4 and 5 at Jindal TPS vi. U#1 and 2 at BTPS

Details of Grid Events during the Month of NOVEMBER 2020, in North Eastern Region

Sl No.	Category of Grid Event (GI Ior 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		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-I	Khupi area of Arunachal Pradesh Power System comprises of downstream load of 132 kV Buses of Tenga and Khupi Substations & Dikshi Power Station.	04-Nov-20 14:59	04-Nov-20 15:18	0:19:00	0	20	0	0.99	1851	2022	Khupi area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Balipara - Tenga line. At 14:59 Hrs on 04.11.2020, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Khupi area of Arunachal Pradesh Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area. Restoration details: Power supply was extended to 132 kV Khupi Substation by charging of 132 kV Balipara - Tenga line at 15:18 Hrs on 04.11.2020.	132 kV Balipara - Tenga line
2	GD-I	Kohima (Capital) area of Nagaland Power System & Karong area of Manipur Power System comprises of downstream load of 132 kV Buses of Kohima, Meluri ,Kiphire & Karong Substations	07-Nov-20 05:17	07-Nov-20 05:25	0:08:00	0	24	0	1.52	1846	1576	Kohima (Capital) area of Nagaland Power System & Karong area of Manipur Power System were connected with rest of NER Grid through 132 Kohima - Wokha line,132 kV Karong -Kohima line & 132 kV Imphal(MA)- Karong line.(132 kV Dimapur(PG)- Kohima line was under continuous S/D since 02/11/20) At 05:17 Hrs on 07.11.20, 132 Kohima -Wokha,132 kV Karong -Kohima line &132 kV Imphal (MA)- Karong line tripped. Due to tripping of these elements, Kohima (Capital) area of Nagaland Power System & Karong area of Manipur Power System were separated from rest of NER Grid and subsequently collapsed due to no source in this area. Restoration details: Power supply was extended to Karong area by charging 132 kV Imphal- Karong line at 05:25 Hrs of 07.11.20 and upto Kohima by charging 132 kV Kohima- Karong at 07:46 hrs on 07.11.20.	132 Kohima -Wokha line 132 kV Karong -Kohima line 132 kV Imphal(MA)- Karong line
3	GD-I	Along area of Arunachal Pradesh Power System comprises of downstream load of 132 kV Bus of Along, Pasighat, Roing,Tezu & Namsai S/S	12-Nov-20 10:18	12-Nov-20 12:50	2:32:00	0	13	0	0.76	1440	1704	Along area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Daporijo- Along line. At 10:18 Hrs on 12.11.2020, 132 kV Daporijo- Along line tripped. Due to tripping of this element, Along area was separated from the rest of NER Grid and subsequently collapsed due to no source in this area. Restoration Details: Power supply was extended to Along area of Arunachal Pradesh Power System by charging of 132 kV Daporijo - Along at 12:50 hrs on 12.11.20	132 kV Daporijo- Along line
4	GD-I	Capital area of Arunachal Pradesh Power System comprises of downstream load of 132 kV Itanagar, Lekhi and Nirjuli Substations.	16-Nov-20 12:39	16-Nov-20 13:18	0:39:00	0	26	0	1.56	1538	1669	Capital area of Arunachal Pradesh Power System was connected with rest of NER Grid through 132 kV Lekhi - Pare Line, (132 kV Pare - Itanagar line & 132 kV Ranganadi - Itanagar line were under outage due to tower collapse since 12.07.20 & 132 kV Nirjuli - Gohpur line was kept open to control loading of 132 kV Lekhi - Pare Line). At 12:39 Hrs on 16.11.20, 132 kV Lekhi - Pare Line tripped. Due to tripping of this element, Capital area of Arunachal Pradesh Power System was separated from rest of NER Grid and subsequently collapsed due to no source in this area. Restoration Details: Power supply was extended to Lekhi via charging 132 kV Pare - Lekhi line at 13:18 Hrs on 16.11.20	132 kV Lekhi - Pare Line
5	GD-I	Khupi area of Arunachal Pradesh Power System comprises of downstream load of 132 kV Buses of Tenga and Khupi Substations & Dikshi Power Station.	17-Nov-20 14:00	17-Nov-20 14:10	0:10:00	0	18	0	1.08	1511	1668	Khupi area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Balipara - Tenga line. At 14:00 Hrs on 17.11.2020, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Khupi area of Arunachal Pradesh Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area. Restoration Details: Power supply was extended to 132 kV Khupi Substation by charging of 132 kV Balipara - Tenga line at 14:10 Hrs on 17.11.2020.	132 kV Balipara - Tenga line
6	GD-I	Khupi area of Arunachal Pradesh Power System comprises of downstream load of 132 kV Buses of Tenga and Khupi Substations & Dikshi Power Station.	17-Nov-20 14:41	17-Nov-20 22:34	7:53:00	0	17	0	1.014	1493	1676	Khupi area of Arunachal Pradesh Power System was connected with the rest of NER Grid through 132 kV Balipara - Tenga line. At 14:41 Hrs on 17.11.2020, 132 kV Balipara - Tenga line tripped. Due to tripping of this element, Khupi area of Arunachal Pradesh Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area. Restoration Details: Power supply was extended to 132 kV Khupi Substation by charging of 132 kV Balipara - Tenga line at 22:34 Hrs on 17.11.2020.	132 kV Balipara - Tenga line
7	GD-I	Karong area of Manipur Power System comprises of downstream load of 132 kV Bus of Karong substation.	23-Nov-20 14:54	23-Nov-20 14:59	0:05:00	0	13	0	0.818	1190	1589	Karong area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal(MA) - Karong line and 132 kV Karong-Kohima line. At 14:54 Hrs on 23.11.2020, 132 kV Imphal(MA) - Karong line and 132 kV Karong-Kohima line tripped. Due to tripping of these elements, Karong area of Manipur Power System was separated from the rest of NER Grid and subsequently collapsed due to no source in this area. Restoration details: Power supply was extended to 132 kV Karong Substation by charging of 132 kV Karong-Kohima line at 14:59 Hrs on 23.11.2020	132 kV Imphal(MA) - Karong line 132 kV Karong-Kohima line
8	GI 2	Arunachal Pradesh	03-Nov-20 12:30	03-Nov-20 14:30	2:00:00	114	0	7.112	0.00	1603	1981	Kameng Unit II tripped at 12:30 Hrs on 03-11-20 due to over current. Revision of schedule done from Block No.59 on 03-11-20.	Kameng Unit II
9	GI 1	Assam	11-Nov-20 03:27	11-Nov-20 06:30	3:03:00	24.5	0	1.623	0.00	1510	1506	Khandong Unit-2 tripped at 03:27 Hrs on 11-11-2020 due to problem in DVR. Revision done from Block No.27 on 11-11-2020.	Khandong Unit 2
10	GI 2	Assam	13-Nov-20 06:22	13-Nov-20 08:00	1:38:00	30.5	0	1.848	0.00	1650	1785	AGBPP Unit-4 tripped at 06:22 Hrs on 13-11-2020 due to tripping of Gas compressor-4. Revision done from Block No.33 on 13-11-2020.	AGBPP Unit-4

Details of Grid Events during the Month of NOVEMBER 2020, in North Eastern Region

Sl No.	Category of Grid Event (GI Ior 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		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)		
						11	GI 2	Assam	14-Nov-20 19:25	14-Nov-20 21:00	1:35:00		
12	GI 2	Assam	15-Nov-20 03:08	15-Nov-20 05:00	1:52:00	24	0	1.669	0.00	1438	1395	AGBPP Unit-1 tripped at 03:17 Hrs on 15-11-2020 due to tripping of Gas compressor-1. Revision done from Block No.21 on 15-11-2020.	AGBPP Unit-1
13	GI 2	Assam	18-Nov-20 18:41	18-11-20 20:30	1:49:00	193	0	10.153	0.00	1901	2557	BgTPP Unit-1 tripped at 18:41 Hrs on 18-11-2020 due to tripping of Boiler. Revision done from Block No.83 on 18-11-2020.	BgTPP Unit-1
14	GI 2	Arunachal Pradesh	20-Nov-20 00:59	20-Nov-20 03:30	2:31:00	148	0	11.709	0.00	1264	1505	Kameng Unit-2 tripped at 00:59 Hrs on 20.11.20 due to tripping of GT. Revision done from Block No.15 on 20-11-2020.	Kameng Unit-2
15	GI 2	Tripura	21-Nov-20 04:22	21-Nov-20 06:00	1:38:00	161	0	10.441	0.00	1542	1442	Palatana Unit ST-I tripped at 04:22 Hrs on 21.11.20 due to Stator Earth Fault. Revision done from Block No.25 on 21-11-2020.	Palatana Unit ST-I
16	GI 2	Arunachal Pradesh	22-Nov-20 23:09	23-Nov-20 01:00	1:51:00	127	0	10.986	0.00	1156	1384	Kameng Unit 2 tripped at 23:09 Hrs on 22.11.20 due to operation of Generating Transformer Buchholz Relay. Revision done from Block No.05 on 23-11-2020.	Kameng Unit 2
17	GI 2	Assam	24-Nov-20 04:22	24-Nov-20 06:00	1:38:00	190	0	16.115	0.00	1179	1466	AGBPP Unit 1, 2, 3, 4, 5, 7 & 8 tripped at 04:22 Hrs on 24.11.20 due to auxiliary power failure. Revision done from Block No.25 on 24-11-2020.	AGBPP Unit 1, 2, 3, 4, 5, 7 & 8
18	GI 2	Tripura	30-Nov-20 02:49	30-Nov-20 04:30	1:41:00	319	0	22.107	0.00	1443	1329	Palatana Unit GT-II tripped at 02:49 Hrs on 30.11.20 due to Stator Earth Fault. Revision done from Block No.19 on 30-11-2020.	Palatana Unit GT-II