Details of Grid Events during the Month of November 2022 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	GD-1	J&K	03-Nov-2022 13:02	03-Nov-2022 14:07	1:05	0	315	0.000	0.676	42903	46574	1. During antecedent condition, 220KV Amargarh(INDIGRID) – Ziankote(JK)(PDD JK) ckt-1 & ckt-2 were carrying ~185MW each. 2. As reported at 13:02 hrs, 220KV Amargarh(INDIGRID) – Ziankote(JK)(PDD JK) ckt 2 tripped on B-N phase to earth fault, fault distance was ~13.39km from Ziankote end. At the same time, 220KV Amargarh(INDIGRID) – Ziankote(JK)(PDD JK) ckt 1 also tripped from Amargarh end only. 3. As per PMU, B-N phase to earth fault which cleared within 120ms is observed. 4. As per SCADA, change in load of approx. 315MW occurred in J&K control area.	1) 220KV Amargarh(INDIGRID) – Ziankote(JK)(PDD JK) ckt 1 2) 220KV Amargarh(INDIGRID) – Ziankote(JK)(PDD JK) ckt 2
2	GI-2	Haryana	04-Nov-2022 13:38	04-Nov-2022 14:25	0:47	0	0	0.000	0.000	44202	47536	1. During antecedent condition, 800 KV HVDC Kurukshetra(PG) bipole-1 was not in operation and Bipole-2 was carrying total 300MW. 2. As reported at 13:38hrs, 800 KV HVDC Kurukshetra(PG) bipole-2(pole 3 & 4) blocked from Champa end due to filter unbalance at Champa. 3. As per PMU, fluctuation in voltage was observed.	1) 800 KV HVDC Kurukshetra(PG) Pole-03 2) 800 KV HVDC Kurukshetra(PG) Pole-04
3	GI-2	J&K	06-Nov-2022 03:54	06-Nov-2022 05:38	1:44	0	0	0.000	0.000	28459	35270	1. On 06th Nov 2022 from 00:00 hrs to 03:00 hrs, load crash of approx. 1200MW(as per SCADA) occurred in J&K & Ladakh control area due to inclement weather condition (heavy rain & windstorm). 2. At 23:52hrs on 05th Nov, 220KV Samba – Bishnah ckt tripped on B-N phase to earth fault during heavy rain and windstorm, fault distance was 35km & fault current was 2.8kA from Bishnah end. 3. Further at 00:07hrs, 220KV Samba(PG) –Samba(JK) ckt-1 tripped on over voltage followed by tripping of , 220KV Samba(PG) –Samba(JK) ckt-2 on over voltage at 00:47 hrs. 4. Further at 03:54 hrs, 400/220kV 315MVA ICT-1,2&3 at Samba(PG) all tripped on over flux protection operation. 5. During antecedent condition, voltage at 400kV side was ~427kV & at 220kV side was ~247kV. 6. As per PMU, no fault in system was observed and voltage at 400kV side was ~427kV.	1) 400/220kV 315MVA ICT-1 at Samba(PG) 2) 400/220kV 315MVA ICT-2 at Samba(PG) 3) 400/220kV 315MVA ICT-3 at Samba(PG)
4	GD-1	Himachal Pradesh	06-Nov-2022 13:53	06-Nov-2022 14:25	0:32	0	75	0.000	0.166	39288	45168	1. During antecedent condition, bus coupler at 220kV Baddi(HP) was in open condition and 220kV circuit to Upper Nangal & Mandhala, 220/66kV 100MVA transformer-1&3 were connected at 220kV Bus-1 and 220kV circuit to Kunihar, Pinjore & Wardhman, 220/66kV 100 MVA transformer-2&4 were connected at 220kV Bus-2 at Baddi(HP). 2. As reported at 13:53 hrs, R-phase insulator string of 220kV Bus-2 burst which created bus fault on 220kV Bus-2. All the elements connected at 220kV Bus-2 tripped on this fault. 3. As per PMU, R-N phase to earth fault with delayed clearance of approx. 400ms is observed. 4. As per SCADA, change in load of approx. 75MW occurred in HP control area.	1) 220KV Bus 2 at Baddi(HP) 2) 220 KV Baddi(HP)-Pinjore (HV) (HPPTCL) Ckt-2 3) 220 KV Baddi(HP)-Pinjore (HV) (HPPTCL) Ckt-1 4) 220 KV Baddi-Kunihar Ckt-1 5) 220 KV Baddi-Kunihar Ckt-2 6) 220 KV Baddi-Wardhman Ckt
5	GD-1	UP	08-Nov-2022 07:04	08-Nov-2022 08:00	0:56	0	115	0.000	0.265	40230	43413	1. At 06:18hrs, 220kV Muzaffarnagar-Jansath ckt tripped on Y-N phase to earth fault. 2. As reported at 07:04 hrs, while charging of 220kV Muzaffarnagar-Jansath ckt, Y-N phase to earth fault occurred. However line didn't not trip. 3. As fault was still persisting, all four ICTs tripped on over current earth fault protection operation. At the same time, 220kV feeders to Nara tripped on distance protection operation in Z-1, 220kV feeder to Shamli in Z-4 and 220kV feeders to Modipuram & Charla tripped in Z-3. 4. As per PMU at Muzaffarnagar(UP), Y-N phase to earth fault with delayed clearance in 1000ms is observed. 5. As per SCADA, change in load of approx. 115MW is observed in UP control area. 6. As reported, after inspection and patrolling, earth wire of double ckt. tower of 220kV Muzaffarnagar-Nara line & 220kV Muzaffarnagar-Jansath line found broken between tower 32-33 which led to the persisted Y-N fault and status of breaker contact of 220kV Jansath line was not available to relay panel due to which protection of line did not operate.	1) 400/220 kV 315 MVA ICT 1 at Muzaffarnagar(UP) 2) 400/220 kV 315 MVA ICT 2 at Muzaffarnagar(UP) 3) 400/220 kV 315 MVA ICT at Muzaffarnagar(UP) 4) 400/220 kV 500 MVA ICT 4 at Muzaffarnagar(UP) 5) 220 KV Muzaffarnagar-Shamli(UP) ckt 6) 220 KV Muzaffarnagar-Nara(UP) ckt 7) 220 KV Muzaffarnagar-Charla(UP) ckt 8) 220 KV Muzaffarnagar-Modipuram(UP) ckt
6	GD-1	Rajasthan	09-Nov-2022 13:43	09-Nov-2022 18:02	4:19	275	0	0.675	0.000	40725	46694	1. During antecedent condition, SBE6PL RE station was generating approx. 275MW. 2. As reported at 13:43 hrs, R-N phase to phase fault occurred on 220 KV Bhadla(PG)-ESUCRL SL_ BHD_PG (ESUCRL) (ESUCRL) Ckt. Fault distance was approx. 25km from SBE6PL RE station. On this fault, line tripped on line differential protection operation. 3. As per PMU, R-B phase to phase fault which cleared within 100ms is observed and generation loss of ~275MW occurred at SBE6PL RE station due to tripping of 220 KV Bhadla(PG)-ESUCRL SL_BHD_PG (ESUCRL) (ESUCRL) Ckt. 4. As per PMU available at RE stations, phase voltage of 220kV lines at RE stations connected at different ISTS pooling station dipped to 0.9pu at Bhadla(PG), 0.94pu at Fatehgarh2(PG), 0.947pu at Adani Solar Park, 0.95pu at Bhadla2(PG) & 0.98pu at Bikaner(PG). 5. As per SCADA data, drop of approx. 280MW in NR total solar generation is observed.	1) 220 KV Bhadla(PG)-ESUCRL SL_BHD_PG (ESUCRL) (ESUCRL) Ckt-1
7	GD-1	J&K	11-Nov-2022 19:12	11-Nov-2022 20:34	1:22	115	230	1.846	0.467	6229	49271	1. As reported, at 19:12 hrs, R-N phase to earth fault occurred on 220kV Hiranagar-Ghatti ckt, fault current was ~6.94km from Hiranagar end. As reported by NR-2 POWERGRID, fault distance was ~26.8km (Z-3) from Sambha(PG) end. 2. On this fault, 220kV Hiranagar-Ghatti ckt along with 220kV BUS 1 Hiranagar(JK PDD) and 220 KV Samba(PG)-Hiranagar(PDD) (PG) Ckt-1&2 tripped from Hiranagar end only. 3. Due to tripping of above elements, generation of Sewa-II HEP also got affected due to loss of evacuation path. 4. As per PMU at Sambha(PG), R-N phase to earth fault with delayed clearance in 320ms is observed. 5. As per SCADA, load loss of approx. 230MW observed in J&K(UT) & Ladakh(UT) control area and change in generation of approx. 115MW is observed at Sewa-II HEP.	1) 220kV Ghatti – Hiranagar ckt 2) 220 KV Samba(PG)-Hiranagar(PDD) (PG) Ckt-1 3) 220 KV Samba(PG)-Hiranagar(PDD) (PDD JK) Ckt-2 4) 220kV BUS 1 Hiranagar(JK PDD)
8	GI-2	UP	14-Nov-2022 13:21	14-Nov-2022 14:00	0:39	0	0	0.000	0.000	45148	46060	1. As reported at 13:21 hrs, telemetry data verification of 220 KV Amariya ckt-1 was being done. Bus-2 isolator of the Amariya line was closed for the same purpose, at the same time, a Monkey jumped on B-ph Bus-1 isolator (Bus-1 isolator jumpers were not connected to bus-1 and were grounded) which created B-N phase to earth bus fault on 220kV Bus-2 at 400/220kV Bareilly. 2. As 220 KV Bus Bar protection is out of service due to its exhausted capacity at 400 KV Bareilly, fault cleared after the tripping of 220kV feeders CB to Ganj2-1&2, Shahjhanpur, Pilibhit-2, Dohna-1, Pantnagar and Pithoragarh on distance protection operation at Bareilly end in Z-4, tripping of 220kV feeder to Dohna-2 & Pilibhit-1 from remote end and tripping of 400/220kV 315MVA ICT-1, 2 & 3 on directional earth fault overcurrent protection operation. 3. As per PMU, B-N phase to earth fault with delayed clearance in 840ms is observed. 4. As per SCADA, no change in load is observed in UP & Uttarakhand control area.	1) 400/220 kV 315 MVA ICT 1 at Bareilly(UP) 2) 400/220 kV 315 MVA ICT 2 at Bareilly(UP) 3) 400/220 kV 315 MVA ICT 3 at Bareilly(UP) 4) 220 KV Pithoragarh(PG)-Bareilly(UP) (PG) Ckt 5) 220 KV Bareilly-CB Ganj2(UP) ckt-1&2 6) 220 KV Bareilly-Pilibhit(UP) ckt-1&2 7) 220 KV Bareilly-Shahjhanpur(UP) ckt 8) 220 KV Pantnagar(UK)-Bareilly(UP) (UP) Ckt-1 9) 220 KV Bareilly-Dohna(UP) ckt-1
9	GD-1	Rajasthan	17-Nov-2022 13:06	17-Nov-2022 13:30	0:24	610	0	1.322	0.000	46150	47981	1. At 13:06hrs, 220kV Hindaun220-Sikrai(Dausa)(Raj) ckt (carrying ~75MW) tripped from Sikrai(Dausa) end on protection maloperation which further resulted into overloading of 220kV Hindaun400-Hindaun220(Raj) ckt and 400/220kV 315MVA ICTs at Hinduan. Subsequently, 220kV Hindaun400-Hindaun220(Raj) ckt tripped followed by tripping of 400/220kV 315MVA ICTs at Hinduan on overcurrent protection operation. 2. As per PMU, no fault is observed in system. 3. As per SCADA, load loss of approx. 610MW is observed in Rajasthan control area	1) 220kV Hindaun220-Sikrai(Dausa)(Raj) ckt 2) 220kV Hindaun400-Hindaun220(Raj) ckt 3) 400/220 kV 315 MVA ICT -1 at Hindaun(Raj) 4) 400/220 kV 315 MVA ICT -2 at Hindaun(Raj)

Details of Grid Events during the Month of November 2022 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)		
10	GD-1	Rajasthan	17-Nov-2022 14:43	17-Nov-2022 15:09	0:26	610	0	1.369	0.000	44556	46583	1. At 13:06hrs, 220kV Hindaun220-Sikrai(Dausa)(Raj) ckt (carrying ~75MW) tripped from Sikrai(Dausa) end on protection maloperation which further resulted into overloading of 220kV Hindaun400-Hindaun220(Raj) ckt and 400/220kV 315MVA ICTs at Hinduan. Subsequently, 220kV Hindaun400-Hindaun220(Raj) ckt tripped followed by tripping of 400/220kV 315MVA ICTs at Hinduan on overcurrent protection operation. 2. As per PMU, no fault is observed in system. 3. As per SCADA, load loss of approx. 610MW is observed in Rajasthan control area	1) 220kV Hindaun220-Sikrai(Dausa)(Raj) ckt 2) 220kV Hindaun400-Hindaun220(Raj) ckt 3) 400/220 kV 315 MVA ICT -1 at Hindaun(Raj) 4) 400/220 kV 315 MVA ICT -2 at Hindaun(Raj)
11	GI-2	UP	22-Nov-2022 13:46	22-Nov-2022 15:31	1:45	0	0	0.000	0.000	45607	48595	1. As reported at 13:46 hrs, 400/220 kV 500 MVA ICT 2 at Dadri(NT) tripped on differential protection operation. 2. As per PMU at Dadri(NTPC), R-N phase to earth fault which cleared within 100ms is observed. 3. At the same time, 400 KV Dadri(NT)-Panipat(BB) (PG) Ckt-1 tripped from Panipat end only on distance protection operation in Z-2 and 400 KV Dadri(NT)-Loni Harsh Vihar(DV) (NT) Ckt-1 tripped from Dadri(NTPC) end only on distance protection operation in Z-4. 4. As per SCADA, no change in load is observed in Delhi & Haryana control area.	1) 400/220 kV 500 MVA ICT 2 at Dadri(NT) 2) 400 KV Dadri(NT)-Panipat(BB) (PG) Ckt-1 3) 400 KV Dadri(NT)-Loni Harsh Vihar(DV) (NT) Ckt-1
12	GD-1	Punjab	24-Nov-2022 05:51	24-Nov-2022 13:55		367	0	1.066	0.000	34431	42373	1. During antecedent condition, 210MW Unit-4&6 were running and generating ~175MW & 192MW respectively. Unit-6 along with Gobindgarh-3 & Bassipathana feeders were on reserve bus. 2. As reported at 05:51 hrs, when GT breaker of 210MW Unit-5 at Ropar(GGSSTP) was closed during synchronizing Unit-5, there was unbalance current in R,Y,B phases. It led to the operation of GT standby earth fault protection resulting into tripping command initiation to Unit-5 CB. However, Y-ph pole of Unit-5 CB didn't open which further led to the operation of its LBB protection. 3. On LBB protection operation, all the elements connected at Main Bus section-3 i.e., 210 MW Guru Gobind Singh TPS (Ropar) - UNIT 4, ST-3 (supplies auxiliaries of Unit-3&4), ST-4 (supplies auxiliaries of Unit-5&6), 220kV feeders to Mohali, GOBIO-2 & Khara tripped. Bus sectionalizer between sections-2 & section-3 of main bus, bus coupler between main and reserved bus also opened. With this, 210MW Unit-6 along with 220kV feeders to Gobindgarh-3 & Bassipathana got separated as they were connected at reserve bus. 4. However, as ST-4 (connected at Main bus section-3) already tripped, Unit-6 also tripped at 05:55 hrs due to tripping of its auxiliaries. 5. As per PMU at Jalandhar(PG), no fault in system is observed. 6. As per SCADA, Unit-4 tripped at 05:51hrs & Unit-6 tripped at 05:55 hrs, total generation loss of approx. 367MW is observed at Ropar(GGSSTP).	1) 210 MW Guru Gobind Singh TPS (Ropar) - UNIT 4 2) 210 MW Guru Gobind Singh TPS (Ropar) - UNIT 6 3) 220kV Ropar-Mohali ckt 4) 220kV Ropar-GOBIO ckt-2 5) 220kV Ropar-Khara ckt
13	GI-2	Haryana	26-Nov-2022 20:41	26-Nov-2022 21:39		0	0	0.000	0.000	36240	44354	1. During antecedent condition, 800 KV HVDC Kurukshetra(PG) bipole-1 was in blocked condition on voltage regulation and Bipole-2 was in service carrying total 1500MW from Champa to Kurukshetra in balanced mode. 2. As reported at 20:40hrs, as per NLDC instruction, Bipole-2 power ramp down from power order 1500MW to 100MW was initiated from Champa end. However, during power ramp down process, ACVS control (this control feature is incorporated in latest version 6 software) at Kurukshetra end maloperated and it switched out two (02) number of B type filters (HACQ42 & HACQ52). It violated minimum filter requirement (minimum filter require for Bipole operation is two (02) A type and one (01) B type) for Bipole operation which resulted into tripping of Block-2 on filter limit protection operation. 3. As per PMU, fluctuation in voltage was observed. 4. Later at approx. 21:40hrs, Bipole-2 was deblocked after disabling ACVC control at Kurukshetra end.	1) 800 KV HVDC Kurukshetra(PG) Pole-03 2) 800 KV HVDC Kurukshetra(PG) Pole-04
14	GI-2	Haryana	28-Nov-2022 16:12	28-Nov-2022 16:12		0	0	0.000	0.000	42087	44759	1. During antecedent condition, 800 KV HVDC Kurukshetra(PG) pole-2 was in blocked condition on voltage regulation and pole-1,3&4 were carrying 500MW, 500MW & 1000MW respectively. 2. As reported at 16:12hrs, Pole-1 & Pole-3 blocked on CAT B protection operation at Champa end, protection operated due to unavailability of both communication lane of Bipole-1 at Champa end. 3. As per PMU, fluctuation in voltage was observed.	1) 800 KV HVDC Kurukshetra(PG) Pole-01 2) 800 KV HVDC Kurukshetra(PG) Pole-03
15	GD-1	Haryana	30-Nov-2022 15:15	30-Nov-2022 15:40		0	60	0.000	0.127	44467	47361	1. During antecedent condition, 220kV Bus-1&2 were operating in tied condition as bus coupler was not in service and 220/132kV 200MVA Transformer-1&2 at Khurja(UP) were carrying approx. 30MW(as per SCADA data) 2. As reported at 15:15 Hrs, bus side R-Phase jumper of CT of 220kV NAPP(NP)-Khurja(UP) (UP) Ckt broken at Khurja end which created bus fault. On this fault, bus bar protection at 220kV side operated. 3. Since both 220kV bus were operating in tied condition, all the elements connected at both 220kV Bus (Bus-1&2) tripped on bus bar protection operation. 4. As per PMU at Aligarh(PG), R-N fault which cleared within 120ms is observed. 5. As per SCADA, load loss of approx. 60MW occurred in UP control area.	1) 220kV Bus-1 at Khurja(UP) 2) 220kV Bus-2 at Khurja(UP) 3) 220kV NAPP(NP)-Khurja(UP) (UP) Ckt 4) 220kV Khurja-Sikandrabad(UP) Ckt 5) 220kV Khurja-Harduaganj(UP) Ckt-1 6) 220kV Khurja-Harduaganj(UP) Ckt-2 7) 220kV Khurja-Jhangirabad(UP) Ckt 8) 220kV Khurja-Debai(UP) Ckt 9) 220kV Khurja-Dadri(UP) Ckt 10) 220/132kV 200MVA Transformer-1 at Khurja(UP) 11) 220/132kV 200MVA Transformer-2 at Khurja(UP)

Details of Grid Events during the Month of November 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)		
1	GI-1	WR	23-Nov-22 16:10	23-Nov-22 16:30	0:20	-	348.7	-	0.006	60508	61938	At 16:10 Hrs on 23-11-22, while taking outage of 220 kV Kim- TPGL-2, earth rod came into induction zone of 220KV Kim Bus 1 and resulted in tripping of all the connected elements on Bus bar protection operation. 220kV Kim- GSEG, 220kV Kim- Utran-1, 220 kV Kim- Kosamba-2, 220/66 kV 100 MVA Kim ICT-4 & 220/66 kV 160 MVA Kim ICT-5 connected to 220 kV Kim Bus 1 tripped on Bus bar protection operation. With these tripping, 220/66 kV 100 MVA Kim ICTs 1,2&3 got overloaded and tripped on over current protection operation. As informed by SLDC Gujarat, load loss of 348.7 MW occurred due to the event.	Tripping of 1. 220 kV Kim Bus 1 2. 220 kV Kim- GSEG 3. 220 kV Kim- Utran 1 4.220 kV Kim- Kosamba 2 5.220/66 kV 100 MVA Kim ICTs 1,2,3&4 6.220/66 kV 160 MVA Kim ICT 5

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

Sl No.	Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event (pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
	(GI 1or 2/ GD-1 to GD-5)					Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GD-1	Telangana	02-Nov-22 00:37	02-Nov-22 01:23	46 mins	0	60	0.00%	0.19%	31109	30949	Complete Outage of 220kVChalakurthy SWS, 220kV/11kV Puliyatanda LIS and 220kV/11kV Puttamgandi LIS of TSTRANSCO: 220kV/11kV Puliyatanda LIS and 220kV/11kV Puttamgandi LIS are being radially fed from 220kV Chalakurthy SWS. 220kV Chalakurthy SWS is operating with single bus configuration. As per the reports submitted, the triggering incident was R-N fault in 220kV Miryalaguda Chalakurthy line. Due to struck breaker condition at 220kV Chalakurthy, LBB operated. This resulted in complete outage of 220kVChalakurthy SWS, 220kV/11kV Puliyatanda LIS and 220kV/11kV Puttamgandi LIS.	1. 220kV Chalakurthy Miryalaguda 2. 220kV Chalakurthy KM Pally Line-1&2 3. 220kV Chalakurthy Puttamgandi 4. 220kV Chalakurthy Puliyantanda 5. 220kV Chalakurthy Nsagar
2	GD-1	Andhra Pradesh	04-Nov-22 02:38	04-Nov-22 07:21	4 hrs 43 mins	336	0	1.10%	0.00%	30574	30505	Complete Outage of 400kV RYTPP Generating station of APGENCO: As per the reports submitted, the triggering incident was tripping of Unit-6 due to flame failure. Subsequently, 400kV RYTPP Kalikiri Line-2 and 400kV Chittoor Kalikiri Line-2 tripped on Over voltage protection at Kalikiri end and DT was sent remote ends. 400kV RYTPP Kalikiri Line-1 tripped on Over voltage protection at RYTPP end and DT was sent to Kalikiri end. Tripping of both connected lines resulted in complete outage of 400kV RYTPP Generating station.	1. 400kV RYTPP Kalikiri Line-1&2 2. 400kV Chittoor Kalikiri Line-2 3. RYTPP Unit-6
3	GD-1	Tamil Nadu	09-Nov-22 02:06	09-Nov-22 18:47	16 hrs 41 mins	0	0	0.00%	0.00%	30876	30842	Complete Outage of 230kV/33kV Sprng Pugalur Wind: As per the reports submitted, the triggering incident was a Y-N fault in 230kV Pugalur_PG to Sprng Pugalur line. Tripping of the only connected line resulted in a complete outage of 230kV Sprng Pugalur Wind station. No Wind generation loss was observed at 230kV/33kV Spring Pugalur during this event.	1. 230kV Pugalur_PG Sprng Pugalur Line-1
4	GD-1	Telangana Karnataka	09-Nov-22 12:42	09-Nov-22 14:21	39mins	22	20	0.05%	0.04%	46049	44733	Complete Outage of 220kV Upper Jurala PH of TSGENCO and 220kV/110kV Raichur_KA SS of KPTCL: During antecedent conditions, all 220kV elements were connected to 220kV Bus-1 at 220kV/110kV Raichur_KA SS due to outage of Bus-2. 220kV Upper Jurala Jurala Line-1&2 were under outage. As per the reports submitted, the triggering incident was R-N fault in 220kV Upper Jurala Raichur_KA Line-2. At Upper Jurala end, zone-1 protection operated and the line tripped. At Raichur end, the fault was sensed in zone-1, R-phase limb of the Circuit breaker failed to open and subsequently, LBB operated and all the elements connected to the bus tripped resulting in complete outage of 220kV/110kV Raichur_KA SS. Tripping of 220kV Upper Jurala Raichur_KA Line-1&2 resulted in complete outage of 220kV Upper Jurala PH .	1. 220kV Upper Jurala Raichur_KA Line-1&2 2. 220kV Raichur RTPS Line-1&2 3. Unit-4 at Upper Jurala PH
5	GD-1	Tamil Nadu	24-Nov-22 13:41	24-Nov-22 14:07	26mins	0	56	0.00%	0.13%	40370	42564	Complete Outage of 230kV/110kV Ulundurpet SS of TANTRANSCO: 230kV Ulundurpet SS is operating with single bus with transfer bus scheme. As per the reports submitted, the triggering incident was B phase 230kV Bus PT failure at 230kV/110kV Ulundurpet SS. Immediately, BBP operated and all the elements connected to the bus tripped. This resulted in complete outage of 230kV/110kV Ulundurpet SS	1.230kV Ulundurpet Cuddalore 2.230kV Ulundurpet Neyveli TS-II 3.230kV Ulundurpet Sankarapuram 4. 230kV/110kV 100MVA Auto Transformer-1 &2
6	GD-1	Karnataka	27-Nov-22 22:05	27-Nov-22 22:15	10mins	0	115	0.00%	0.35%	29418	33033	Complete Outage of 220kV/66kV Harohalli SS, 220kV/66kV Kanakpura SS, 220kV/66kV KIADB Harohalli SS, and 220kV/66kV Tataguni SS of KPTCL: During antecedent conditions, 220kV TK Halli Kanakpura line and 220kV Tataguni Vrushabhavathy line were under outage. 220kV/66kV Harohalli SS, 220kV/66kV Kanakpura SS, 220kV/66kV KIADB Harohalli SS, and 220kV/66kV Tataguni SS were being radially fed from 220kV/66kV Somanahalli SS. 220kV Somanahalli Harohalli, 220kV Somanahalli Tataguni and 400kV/230kV Somanahalli ICT-1 are connected to 220kV Bus section A1 at 220kV/66kV Somanahalli SS. As per the reports submitted, the triggering incident was R-phase CT failure in 220kV Somanahalli Harohalli line at 220kV/66kV Somanahalli_KA SS. Since the BBP of 220kV bus sectionaliser A1 was not in service at 220kV/66kV Somanahalli SS due to ongoing construction works, the fault was cleared by HV side backup Over current protection of 400kV/230kV Somanahalli ICT-1. This resulted in loss of power supply to 220kV Bus section A1 at 220kV/66kV Somanahalli ss and further resulted in complete outage of 220kV/66kV Harohalli SS, 220kV/66kV Kanakpura SS, 220kV/66kV KIADB Harohalli SS, and 220kV/66kV Tataguni SS.	1. 220kV Somanahalli Harohalli 2. 400kV/220kV Somanahalli ICT-1
7	GI-1	Tamil Nadu	03-Nov-22 01:11	03-Nov-22 02:04	53 mins	0	0	0.00%	0.00%	30953	30760	Tripping of 230kV Bus of 230kV/110kV/11kV Kadaperi SS of TANTRANSCO : 230kV/110kV/11kV Kadaperi SS is operating with single bus configuration at 230kV level. As per the reports submitted, the triggering incident was B-phase CT failure in 220kV Kadaperi Kalvendapattu line. 220kV BBP operated and all the elements connected to the bus tripped. 110kV was intact at 230kV/110kV/11kV Kadaperi SS during the event.	1. 230kV Kadaperi Kalvendapattu 2. 230kV Kadaperi Sriperumbudur Line-1&2 3. 230kV Kadaperi Alandur 4. 230kV Kadaperi Porur 5. 230kV/110kV 100MVA Kadaperi Auto Transformer -1,2&3
8	GI-1	Telangana	16-Nov-22 15:33	16-Nov-22 18:58	3 hrs 25 mins	0	0	0.00%	0.00%	39615	42348	Tripping of 220kV Bus-1 of 400kV/220kV/132kV Suryapet SS of TSTRANSCO : As per the reports submitted, while carrying out PTR-1 HV breaker maintenance, earth rod came into 220kV Bus-1 induction zone causing bus fault. Immediately, BBP operated and all the elements connected to 220kV Bus-1 tripped at 400kV/220kV/132kV Suryapet SS.	1. 220kV Suryapet Chillakallu 2. 220kV Suryapet Miryalaguda Line-1 3. 220kV Suryapet Budidampadu Line-1 4. 400/220kV 315 MVA ICT-1 at Suryapet 5. 220/132 kV 100 MVA PTR-1
9	GI-1	Tamil Nadu	29-Nov-22 05:06	29-Nov-22 06:04	58mins	0	0	0.00%	0.00%	28908	33186	Tripping of 230kV Bus-1 of 230kV Checkanurani Switching Station of TANTRANSCO and Multiple Trippings at 400kV/230kV Madurai SS of PGCIL SR-2: As per the reports submitted, the triggering incident was R-N fault in 230kV Checkanurani NM Patty line. At Checkanurani end, due to SF6 gas contamination, LBB operated and all the elements connected to 230kV Bus-1 got tripped at 230kV Checkanurani Switching Station.	1. 400kV/230kV Madhurai ICT-1&2 2. 230kV Checkanurani NM Patty line 3. 230kV Checkanurani Rebganathapuram 4. 230kV Checkanurani Pasumalai 5. 230kV Checkanurani Theni

Details of Grid Events during the Month of November 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	Tashiding HEP	13-Nov-2022 16:34	13-Nov-2022 17:47	01:13	0	0	0.00%	0.00%	25320	16169	At 16:26 Hrs on 13.11.2022, while desynchronizing U#1 at Tashiding, its breaker didn't open. 220 kV Tashiding-New Melli-1 tripped connected to same bus tripped. At 16:34 Hrs, reverse power flow was observed in ckt-2 at Tashiding end and that line was hand-tripped from Tashiding to avoid any unanticipated issue with generating units. No generation loss or load loss occurred.	220 kV Tashiding HEP- New Melli D/c
2	GD-1	Chatra	18-Nov-2022 01:23	18-Nov-2022 02:51	01:28	0	23	0.00%	0.14%	24149	16035	At 01:23 Hrs on 18.11.2022, 220 kV Daltonganj-Chatra-1 tripped due to B_N fault. Total power failed at Chatra S/s as it is being fed radially through only one circuit. 220 kV Daltonganj-Chatra-2 is LILOed at Latehar, however, 220 kV Latehar-Chatra is not charged yet. 23 MW load loss reported at Chatra by Jharkhand SLDC.	220 kV Daltonganj-Chatra-1
3	GI-1	Mejia (MTPS)	20-Nov-2022 10:40	20-Nov-2022 11:15	00:35	366	0	1.46%	0.00%	25048	16663	At 10:40 Hrs on 20.11.2022, 220 kV Mejia-Durgapur (DVC) tripped due to B_N fault. At the same time its LBB relay maloperated and all elements connected to 220 kV Bus-3 at Mejia tripped. SST#D was connected to 220 kV Bus-4, however, its CT switching relay was defective and isolator status was showing that it was connected to both buses, hence 220 kV Bus-4 at Mejia also tripped. 250 MW U#5, U#6 tripped leading to 366 MW generation loss at Mejia.	220 kV Mejia-Ranchi-1 220 kV Mejia-Ramgarh-1 220 kV Mejia-Durgapur D/c U#5, U#6 at Mejia (250 MW each) SST#D, SST#E
4	GD-1	Tashiding HEP	28-Nov-2022 14:16	28-Nov-2022 14:45	00:29	0	0	0.00%	0.00%	25306	16159	At 14:16 Hrs on 28.11.2022, during testing of bus bar protection scheme at Tashiding, tripping command was extended to master trip relay of both outgoing feeders and 220 kV Tashiding-New Melli D/c tripped from Tashding only. No load loss or generation loss occurred.	220 kV Tashiding HEP- New Melli D/c

Details of Grid Events during the Month of November 2022 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	Kohima, Meluri & Kiphire areas of Nagaland Power System	02-Nov-22 13:52	02-Nov-22 14:10	0:18:00	8	19	0.37%	0.96%	2165	1989	Kohima, Meluri & Kiphire areas of Nagaland Power System were connected with the rest of NER Grid through 132 kV Dimapur-Kohima (Reconfigured), 132 kV Karong-Kohima, 132 kV Kohima-Chephobozou and 132 kV Kohima-Meluri lines. 132 kV Dimapur- Kohima line was under outage. At 13:52 Hrs on 02.11.2022, 132 kV Dimapur- Kohima (Reconfigured), 132 kV Karong-Kohima, 132 kV Kohima-Chephobozou and 132 kV Kohima-Meluri lines tripped. Due to tripping of these elements, Kohima, Meluri & Kiphire areas of Nagaland Power System were separated from the rest of NER Grid and subsequently collapsed due to load generation mismatch in these areas. Power supply was extended to Kohima, Meluri & Kiphire areas of Nagaland Power System by charging 132 kV Dimpaur - Kohima line at 14:10 Hrs on 02.11.2022.	132 kV Dimapur- Kohima(Reconfigured), 132 kV Karong-Kohima, 132 kV Kohima-Chephobozou and 132 kV Kohima-Meluri lines
2	GD 1	Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	05-Nov-22 13:08	05-Nov-22 13:30	0:22:00	0	22	0.00%	1.05%	1763	2092	Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with rest of NER Grid through 132 kV Ranganadi - Ziro line. At 13:08 Hrs on 05.11.2022, 132 kV Ranganadi - Ziro line tripped. Due to tripping of this element, Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were separated from rest of NER Grid and subsequently collapsed due to no source in these areas. Power supply extended to Ziro, Daporijo, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Ranganadi - Ziro line at 13:30 Hrs on 05.11.2022	132 kV Ranganadi - Ziro line
3	GD 1	Bongaigaon, Dhaligaon, Bornagar,Barpeta, Nalbari, Sipajhar and Tangla areas of Assam Power System	18-Nov-22 16:17	18-Nov-22 17:22	1:05:00	0	160	0.00%	7.77%	2393	2058	Bongaigaon, Dhaligaon, Bornagar, Barpeta, Nalbari, Sipajhar and Tangla areas of Assam Power System were connected with rest of NER grid through 220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2, 220 kV Agia - BTPS 1, 220 kV Agia - BTPS 2, 220 kV BTPS - Salakati 2 lines, 315 MVA, 400/220/33 kV ICT 1 at BgTPP, 315 MVA, 400/220/33 kV ICT 2 at BgTPP, 220 kV BTPS Main Bus I and II. 220 kV Salakati-BTPS-1 and 220 kV Alipurduar-Salakati 2 were under PSD and 132 kV Salakati-Gylephu line was under emergency shutdown. 132 kV Dhaligaon-Nalbari was kept open due to low loading capability of the line. At 16:17 Hrs on 18.11.2022, 220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2, 220 kV Agia - BTPS 1, 220 kV Agia - BTPS 2, 220 kV BTPS - Salakati 2 lines, 315 MVA, 400/220/33 kV ICT 1 at BgTPP, 315 MVA, 400/220/33 kV ICT 2 at BgTPP, 220 kV BTPS Main Bus I and Bus II tripped. Due to tripping of these elements, Bongaigaon, Dhaligaon, Bornagar,Barpeta, Nalbari, Sipajhar and Tangla areas of Assam Power System got separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power Supply was extended to Bongaigaon, Dhaligaon, Bornagar,Barpeta, Nalbari, Sipajhar and Tangla areas of Assam Power System by charging 220 kV Salakati-BTPS 2 line at 17:22 Hrs on 18.11.2022	220 kV BTPS - Rangia 1, 220 kV BTPS - Rangia 2, 220 kV Agia - BTPS 1, 220 kV Agia - BTPS 2, 220 kV BTPS - Salakati 2 lines, 315 MVA, 400/220/33 kV ICT 1 at BgTPP, 315 MVA, 400/220/33 kV ICT 2 at BgTPP, 220 kV BTPS Main Bus I and Bus II
4	GI-I	Tripura	04-Nov-22 15:27	04-Nov-22 17:00	1:33:00	24	0	0.97%	0.00%	2464	2118	AGTCCPP Unit 5 tripped at 15:27 Hrs. on 04-11-22 due to AC Condenser fan failure. Revision done from Block No.69 on 04-11-22	AGTCCPP Unit 5
5	GI-II	Assam	07-Nov-22 09:38	07-Nov-22 10:16	0:38:00	27	0	1.23%	0.00%	2191	1901	AGBPP Unit 2 tripped at 09:38 Hrs. on 07-11-22 due to tripping of Gas Booster Compressor 3. Revision done from Block No.45 on 07-11-22	AGBPP Unit 2
6	GI-II	Assam	07-Nov-22 22:57	08-Nov-22 00:30	1:33	28	0	1%	0%	2649	2026	AGBPP Unit 2 tripped at 22:57 Hrs. on 07-11-22 due to tripping of Gas Booster Compressor 3. Revision done from Block No 3 on 08-11-22.	AGBPP Unit 2
7	GI-II	Assam	10-Nov-22 15:15	10-Nov-22 17:00	1:45	227	0	10%	0%	2222	1994	BGTPP Unit 2 tripped at 15:15 Hrs. on 10-11-22 due to tripping of Boiler feed pump. Revision done from Block No.69 on 10-11-22	BGTPP Unit 2
8	GI-I	Tripura	17-Nov-22 10:46	17-Nov-22 12:30	1:44:00	13	0	0.62%	0.00%	2096	1783	AGTCCPP Unit 3 tripped at 10:46 Hrs. on 17-11-22 due to logical problem arose due to HRSG 3. Revision done from Block No.69 on 17-11-22	AGTCCPP Unit 3
9	GI-I	Tripura	24-Nov-22 16:15	24-Nov-22 18:00	1:45:00	30	0	1.25%	0.00%	2400	2146	AGTCCPP Unit 5 tripped at 16:15 Hrs. on 24-11-22 due differential relay maloperation. Revision done from Block No.73 on 24-11-22	AGTCCPP Unit 5
10	GI-II	Assam	28-Nov-22 08:38	28-Nov-22 10:30	1:52:00	22	0	0.90%	0.00%	2446	1985	AGBPP Unit 2 tripped at 08:38 Hrs. on 28-11-22 due to gas compressor fault. Revision done from Block No 43 on 28-11-22.	AGBPP Unit 2