

**Details of Grid Events during the Month of November 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	02-Nov-2021 16:44	02-Nov-2021 20:24	3:40	0	0	0.000	0.000	32393	40359	At 16:44 Hrs, LBB of 220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-2 operated due to improper CT selection, which led to tripping Of all the circuit breakers connected to Bus-IV resulted into tripping of 220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-3 and 400/220 kv 500 MVA ICT 3 at Mandola(PG). As per PMU, B-N phase to earth fault with delayed clearance in 440ms is observed. In antecedent condition, 220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-3 and 400/220 kv 500 MVA ICT 3 at Mandola(PG) were carrying 154MW & 133MW respectively.	1) 220 KV Mandola(PG)-South Wazirabad(DV) (DTL) Ckt-3 2) 400/220 kv 500 MVA ICT 3 at Mandola(PG)
2	GI-1	UTTAR PRADESH	09-Nov-2021 15:41	09-Nov-2021 19:05	3:24	0	0	0.000	0.000	30551	38958	At 15:42 hrs, bur bar relay of bus bar-1 maloperated on Gas Zone-1 flag which resulted into tripping of 400 KV Lucknow_1(PG)-Jehta_Hardoi Road (UP) (PG) Ckt-1, 400 KV Unnao(UP)-Jehta_Hardoi Road (UP) (PG) Ckt-1 and 400/220 kv 500 MVA ICT 1 at Jehta_Hardoi Road (UP) which were connected to 400KV Bus 1. As per PMU, no fault is observed. In antecedent condition, 400 KV Lucknow_1(PG)-Jehta_Hardoi Road (UP) (PG) Ckt-1, 400 KV Unnao(UP)-Jehta_Hardoi Road (UP) (PG) Ckt-1 and 400/220 kv 500 MVA ICT 1 at Jehta_Hardoi Road (UP) were carrying 51MW, 74MW & 24MW respectively.	1) 400 KV Lucknow_1(PG)-Jehta_Hardoi Road (UP) (PG) Ckt-1 2) 400 KV Unnao(UP)-Jehta_Hardoi Road (UP) (PG) Ckt-1
3	GD-1	UTTAR PRADESH	11-Nov-2021 03:08	12-Nov-2021 01:12	22:04	0	0	0.000	0.000	25143	30645	400 KV Bareilly-Unnao (UP) Ckt-2 tripped on Y-N phase to earth fault after unsuccessful A/R operation, fault distance was 239.5km(88%) from Unnao end. At the same time, 400 KV Bareilly-Unnao(UP) Ckt-1 also tripped on R-N phase to earth fault, fault distance was 164.9km from Unnao end and 61.98km from Bareilly end. As per PMU, Y-N phase to earth fault with unsuccessful A/R operation followed by R-N phase to earth fault is observed. In antecedent condition, 400 KV Bareilly-Unnao (UP) Ckt-1 & Ckt-2 were carrying 251MW & 249MW respectively.	1) 400 KV Bareilly-Unnao (UP) Ckt-2 2) 400 KV Bareilly-Unnao (UP) Ckt-1
4	GI-2	UTTAR PRADESH	11-Nov-2021 20:35	11-Nov-2021 23:28	2:53	0	0	0.000	0.000	32294	40001	At 20:35 Hrs, 765 KV Anpara_D-Unnao (UP) Ckt-1 tripped on B-N phase to earth fault, fault distance was 117.2km and fault current was 3.77kA from Unnao end. At the same time, 765/400 kv 1000 MVA ICT 1 & ICT 2 at Unnao(UP) both tripped on Main-2 REF protection operation. Main 1 & Main 2 differential protection and Main 1 REF didn't operate. 765/400 kv 1000 MVA ICT 1 & ICT 2 at Unnao(UP) have been charged at 22:28Hrs & 23:28Hrs respectively by kept Main-2 REF protection disabled. As per PMU, B-N fault and no A/R operation is observed. In antecedent condition, 765 KV Anpara_D-Unnao (UP) Ckt-1, 765/400 kv 1000 MVA ICT 1 & ICT 2 at Unnao(UP) were carrying 809MW, 533MW & 536MW respectively.	1) 765 KV Anpara_D-Unnao (UP) Ckt-1 2) 765/400 kv 1000 MVA ICT 2 at Unnao(UP) 3) 765/400 kv 1000 MVA ICT 1 at Unnao(UP)
5	GI-2	UTTAR PRADESH	12-Nov-2021 11:25	12-Nov-2021 13:44	2:19	0	0	0.000	0.000	36198	45256	400 KV Badaune(UP)-Rosa(UPC) (OCBTL) Ckt-1&2, 400 KV 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-1&2, 400/220 kv 200 MVA ICT 1&2 at Rosa(UPC) and 220 KV Azipur (UP)-Shahjahanpur(PG) (UP) Ckt-1&2 all tripped on tripping of both 400KV bus due to Bus bar protection operation at 400/220kv Rosa S/s. As per PMU, B-N phase to earth fault cleared in 120ms is observed. In antecedent condition, 400 KV Badaune(UP)-Rosa(UPC) (OCBTL) Ckt-1&2, 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-1&2, 400/220 kv 200 MVA ICT 1&2 at Rosa(UPC) were carrying 190MW, 84MW, 82MW, 77MW, 5MW & 5MW respectively.	1) 220 KV Azipur (UP)-Shahjahanpur(PG) (UP) Ckt-2 2) 400 KV Badaune(UP)-Rosa(UPC) (OCBTL) Ckt-2 3) 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-2 4) 400/220 kv 200 MVA ICT 1 at Rosa(UPC) 5) 400/220 kv 200 MVA ICT 2 at Rosa(UPC) 6) 220 KV Azipur (UP)-Shahjahanpur(PG) (UP) Ckt-1 7) 400 KV Badaune(UP)-Rosa(UPC) (OCBTL) Ckt-1 8) 400 KV Shahjahanpur(PG)-Rosa(UPC) (UP) Ckt-1
6	GI-2	RAJASTHAN	15-Nov-2021 13:11	15-Nov-2021 14:07	0:56	1800	0	5.089	0.000	35373	42634	220 KV Bhadla(PG)-ESUCRL SL_BHD_PG (ESUCRL) Ckt-1 tripped due to snapping of conductor. At the same time, 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-1&2 and 220 KV Bhadla(PG)-Mahoba Solar(Adani) (Adani) Ckt-1 tripped from remote (solar plant) end which led to the loss of all solar generation of ESSEL solar (291MW), MAHABA solar(279MW) and Saurya Urja solar(450MW). 220/33kv ICT 1&3 at MRPL(connected at Bhadla(PG)) also tripped which led to solar generation of 145MW at their end. Partial solar generation loss also observed at ACME solar(connected at Bhadla) and Adani(Bhadla) solar. At the same time, solar generation loss of approx. 240MW is observed at RENEW Sunwave Solar (connected at Fatehgarh2(PG)). Solar generation loss of approx. 170MW is also observed at Bhadla(Raj) As per PMU, R-Y phase to phase fault is observed and voltage was in permissible range during the event. As per SCADA, solar generation loss of approx. 1800MW is observed (approx. 1430MW at Bhadla(PG), 240MW at Fatehgarh2(PG) and 170MW at Bhadla(Raj)).	1) 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-2 2) 220 KV Bhadla(PG)-Mahoba Solar(Adani) (Adani) Ckt-1 3) 220 KV Bhadla(PG)-ESUCRL SL_BHD_PG (ESUCRL) (ESUCRL) Ckt-1 4) 220 KV Bhadla(PG)-Saurya Urja Solar(SU) (Saurya Urja) Ckt-1
7	GD-1	RAJASTHAN	16-Nov-2021 10:19	16-Nov-2021 10:33	0:14	426	0	1.181	0.000	36071	45624	220kv Fatehgarh2-Renew Sunwave ckt and 220kv Fatehgarh2-Renew Jharkhand3 ckt tripped from RENEW end only on DT received from Fatehgarh2 end. Tripping of both lines led to loss of 423MW (as per SCADA) solar generation. As per PMU, fluctuation in voltage is observed. In antecedent condition, 220kv Fatehgarh2-Renew Sunwave ckt and 220kv Fatehgarh2-Renew Jharkhand3 ckt were carrying 204MW & 221MW respectively.	1) 220 KV Fatehgarh_II(PG)-Renew SunWave SL_FGRAH_PG (RSWPL) (RENEW SUN WAVE (RSWPL)) Ckt-1
8	GI-2	J & K	19-Nov-2021 18:11	19-Nov-2021 19:03	0:52	0	0	0.000	0.000	40535	46663	220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-2 tripped on R-N phase to earth fault due to snapping of jumper. Fault distance was 20.53km from Wagoora end & 4.46km from Ziankote end and fault current was 4.8kA from Wagoora end & 6.72kA from Ziankote end. At the same time, 220 KV Amargarh(NRSS XXIX)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 both tripped from Ziankote end only. As per PMU, R-N fault with no A/R operation and cleared in 120ms is observed. In antecedent condition, 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-2, 220 KV Amargarh(NRSS XXIX)-Ziankote(JK) (PDD JK) Ckt-1 & Ckt-2 were carrying 134MW, 174MW & 175MW respectively.	1) 220 KV Wagoora(PG)-Ziankote(JK) (PDD JK) Ckt-2 2) 220 KV Amargarh(NRSS XXIX)-Ziankote(JK) (PDD JK) Ckt-1 3) 220 KV Amargarh(NRSS XXIX)-Ziankote(JK) (PDD JK) Ckt-2
9	GD-1	UTTAR PRADESH	21-Nov-2021 15:34	21-Nov-2021 16:48	1:14	0	0	0.000	0.000	29403	36599	400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2 tripped on B-N phase to earth fault with unsuccessful A/R operation. Fault distance was 16.8km & fault current was 4.2kA from Sarnath end and fault distance was 134.7km & fault current was 3.06kA from Anpara end. During patrolling, a kite thread was found at fault location. At the same time, 400 KV Sarnath-Azamgarh (UP) Ckt-1 tripped only from Azamgarh(UP) end. As per PMU, B-N fault with unsuccessful A/R operation is observed due to permanent fault. In antecedent condition, 400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2 was carrying 270MW.	1) 400 KV Anpara_B(UPUN)-Sarnath(UP) (UP) Ckt-2 2) 400 KV Sarnath-Azamgarh (UP) Ckt-1

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	( 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)		
10	GI-2	RAJASTHAN	25-Nov-2021 22:20	25-Nov-2021 23:46	1:26	0	0	0.000	0.000	27384	36062	220 KV Fatehgarh_II(PG)-AHEJOL PSS HB_FGRAH_PG (AHEJOL) (AHEJOL) Ckt-1 & Ckt-2, 220 KV Fatehgarh_II(PG)-AHEJ2L PSS HB_FGRAH_PG (AHEJ2L) (AHEJ2L) Ckt-1, 220 KV Fatehgarh_II(PG)-AHEJ3L PSS HB_FGRAH_PG (AHEJ3L) (AHEJ3L) Ckt-1, 400/220 kv 500 MVA ICT 1 & ICT 2 at Fatehgarh_II(PG) all tripped due to tripping of 220KV Bus 1 & Bus 2 on bus bar protection operation. Bus bar protection operated on R-N phase to earth bus fault occurred due to failure of R-phase CT of Bus Coupler (208 Bay) at Fatehgarh_II(PG). As per PMU, R-N phase to earth fault is observed.	1) 220 KV Fatehgarh_II(PG)-AHEJOL PSS HB_FGRAH_PG (AHEJOL) (AHEJOL) Ckt-2 2) 220 KV Fatehgarh_II(PG)-AHEJOL PSS HB_FGRAH_PG (AHEJOL) (AHEJOL) Ckt-1 3) 220 KV Fatehgarh_II(PG)-AHEJ2L PSS HB_FGRAH_PG (AHEJ2L) (AHEJ2L) Ckt-1 4) 220 KV Fatehgarh_II(PG)-AHEJ3L PSS HB_FGRAH_PG (AHEJ3L) (AHEJ3L) Ckt-1 5) 400/220 kv 500 MVA ICT 1 at Fatehgarh_II(PG) 6) 400/220 kv 500 MVA ICT 2 at Fatehgarh_II(PG)
11	GI-2	NEW DELHI	27-Nov-2021 09:24	27-Nov-2021 13:02	3:38	0	0	0.000	0.000	34161	46917	220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & Ckt-2 tripped on R-Y phase to phase fault from Mandola end in Z-2, fault distance was 138.2km & fault current was 1.5kA from Mandola end. At the same time, 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1, Ckt-2 & Ckt-3 all tripped on fault in Z-2 from Panipat(BB) end. As per PMU, R-Y phase to phase fault which converted into R-Y-B three phase fault with delayed clearance in 440ms is observed. In antecedent condition, 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & Ckt-2 and 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1, Ckt-2 & Ckt-3 were carrying 154MW, 153MW, 56MW, 55MW & 57MW respectively.	1) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-2 2) 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-3 3) 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-2 4) 220 KV Panipat(BB)-Narela(DV) (BBMB) Ckt-1 5) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1



**Details of Grid Events during the Month of November 2021 in Western Region**



Sl No.	Category of Grid Event ( GI 1or 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM)	Loss of generation / loss of load during the Grid Event		% Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid*		Brief details of the event ( pre fault and post fault system conditions)	Elements Tripped
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-1	WR	04-Nov-21 15:57	04-Nov-21 16:01	0:04	-	75	-	0.17%	43706	44482	At 15:57 Hrs/04-11-2021, 220/110 kV 100 MVA Ponda ICTs 1,2&3 tripped on over current and earth fault protection operation & both 110 kV bus became dead leading to a load loss of 75 MW.	Tripping of 1. 220/110 kV 100 MVA Ponda ICTs 1,2&3 2. 110 kV Ponda Bus 1&2
2	GI-1	WR	04-Nov-21 16:17	04-Nov-21 16:21	0:04	-	100	-	0.23%	43363	43824	At 16:17Hrs/04-11-2021, at 220 kV Thivim S/S, 110 kV Ponda- Tivim 1&2 (idle charged from Tivim end, CB at Ponda end in open condition and closed only during peak hours) tripped on E/F& O/C protection respectively. 220/110 kV 100 MVA Tivim ICT-III tripped on O/C & E/F protection and 110/33kV, 50 MVA Tivim ICT- I tripped on differential protection operation at the same time. There was a load loss of 100 MW due to the event.	Tripping of 1. 110 kV Ponda- Tivim 1&2 2.220/110 kV 100 MVA Tivim ICT 3 3.110/33 kV 50 MVA Tivim ICT 1
3	GD-1	WR	05-Nov-21 15:46	05-Nov-21 16:55	1:09	-	310	-	0.73%	40886	42565	At 15:46 Hrs/05-11-2021, 220kV Mahalakshmi- Amona tripped on B-E fault . At the same time 220 kV Amona- Ponda 2, 220 kV Ponda- Xeldem line and 220/110 kV 100 MVA Ponda ICTs 2&3 tripped. Load loss of 150 MW reported by SLDC Goa. Except 220 kV Mahalakshmi-Amona, all other tripped elements were restored by 15:55 Hrs.  At 16:29 hrs, 220 kV Amona-Ponda 1 & 3 tripped on Y-B fault. Load loss of 160 MW reported by SLDC Goa due to the tripping of these lines.	Tripping of 1. 220 kV Amona- Ponda 1,2&3 2.220 kV Mahalakshmi-Amona 3.220 kV Ponda- Xeldem 4.220/110 kV Ponda ICTs 2&3
4	GD-1	WR	09-Nov-21 19:38	09-Nov-21 20:02	0:24	-	91	-	0.18%	53180	49389	At 19:38 Hrs/09-11-2021, During the operation of 220 kV side isolator of 220/22 kV ICT 4 at Bhandup ss, Y phase fault occurred in 220 kV Bhandup Bus 1. The fault was not cleared by Busbar protection operation as the Bus bar relay was not healthy. 220 kV Bhandup-Mulund line tripped on Zone 4 Distance protection operation at Bhandup end. 220 kV Bhandup- Borivali line tripped on Earth fault protection operation at Borivali end. There was a load loss of 91 MW due to the event.	Tripping of 1. 220 kV Bhandup- Mulund 2. 220 kV Bhandup- Borivali
5	GD-1	WR	10-Nov-21 23:55	11-Nov-21 01:22	1:27	-	-	-	-	46598	44651	At 23:55 Hrs/10-11-2021, short circuit occurred in Static Frequency Controller(SFC) disconnecting switch cubical at Ghatghar station .Simultaneously SUT- 1 nd SUT 2 both tripped And all four 220 kV lines conected at Ghatghar SS also tripped. 220 kV Ghatghar-Washala tripped on Zone 3 Distance protection operation at Washala end. 220 kV Ghatghar-Jindal, 220 kV Ghatghar-Baggaon and 220 kV Ghatghar-Nasik lines tripped from remote end on O/C &E/F protection operation. There was no generation at Ghatghar hydro station during the event.	Tripping of 1. 220 kV Ghatghar- Washala 2. 220 kV Ghatghar- Jindal 3. 220 kV Ghatghar- Baggaon 4. 220 kV Ghatghar- Nashik
6	GI-2	WR	12-Nov-21 20:54	12-Nov-21 21:56	1:02	-	-	-	-	51016	47577	At 20:53 Hrs/12-11-2021, 400 kV Aurangabad(MH) Bus 1 and all connected elements tripped on Bus bar protection due to the blasting of Y phase CB pole of 400 kV Bhusawal line. The event occurred during manual opening of 400 kV Bhusawal line at Aurangabad(MH) end to control high Voltage.	Tripping of 1.400 kV Aurangabad(MH)- Bhusawal 2.400 kV Aurangabad(MH)- Bableshtar 3.400 kV Aurangabad(MH)- Deepnagar 4.400 kV Aurangabad(MH)- Pune(PG) 2 5.400 kV Aurangabad(MH)- Aurangabad(PG) 1 6.400/220 kV Aurangabad ICT 3
7	GI-2	WR	18-Nov-21 14:49	18-Nov-21 15:03	0:14	146	-	0.26%	-	55425	56013	At 14:49 Hrs / 18-11-2021, 400 kV SSP-Rajgarh-1 tripped on Y-E fault. At the same time 50 MW SSP CHPH units 1, 2,&5 also tripped on O/C & E/F protection operation. There was a total generation loss of 146 MW due to the event.	Tripping of 1.400 kV SSP- Rajgarh 1 2. 50 MW SSP (CHPH) Units 1,2 &5
8	GI-2	WR	24-Nov-21 13:35	24-Nov-21 14:34	0:59	391	-	0.70%	-	55960	55307	At 13:35 Hrs/24-11-2021, 400 kV Chandrapur Bus 2 and all the connected elements tripped on Bus bar protection operation. There was no acual fault in the system and the tripping was a mal-operation. The tripping was due to trip command initiated by ZIV-Bus bar scheme and RADSS Bus bar sheme which was also in service , but did not give any tripping command. As intimated by MSETCL, there was no abnormality found during testing after the event. There was a generation loss of 391 MW due to the event.	Tripping of 1. 400 kV Chandrapur- Bhadravathi 1&2 2.400 kV Chandrapur- Parli 3 3. 400 kV Chandrapur- Chandrapur II 2 4. 400 kV Chandrapur HVDC ckt 1 5.400/220 kV Chandrapur ICT 1 6. 210 MW Chandrapur Unit 4 7. 500 MW Chandrapur Unit 7

**Details of Grid Events during the Month of November 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 v.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	30-Nov-21 10:12	30-Nov-21 10:35	00:23	348	82	1.42%	0.52%	24481	15756	At 10:12 Hrs, 220 kV Bus-2 at Budhipadar tripped due to a bus fault at Budhipadar. Isolator dropper of 220 kV Budhipadar-Lephripada at Budhipadar snapped and created bus fault. This led to total loss of power in 220 kV side of 220/132 kV Budhipadar S/s (220 kV Bus-1 was under shutdown). 220 kV IBTPS became dead. Island of Vedanta survived for 22 minutes. Bhushan Steel island didn't survive. Aditya Aluminium island survived. Total 348 MW load loss occurred at IBTPS as all four running units at IBTPS tripped and 82 MW load loss occurred (supply to Vedanta, Bhushan and Aditya Aluminium CPP)	220 kV Bus 2 at Budhipadar 220 kV Budhipadar-IB Thermal Q/c 220 kV Budhipadar-Vedanta D/c 220 kV Budhipadar-Korba D/c 220 kV Budhipadar-Raigarh 220 kV Budhipadar-Bhushan D/c 220 kV Budhipadar-Aditya Alu D/c 220 kV Budhipadar-Lapanga 1 220 kV Budhipadar-Tarkera 1 220 kV Budhipadar-SPS 1 220 kV Budhipadar Lephripada 1 220/132 kV 160 MVA ATR#1 at Budhipadar

**Details of Grid Events during the Month of November 2021 in Southern 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)	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	02-Nov-21 01:55	02-Nov-21 08:02	6 hrs 7 mins	0	0	0.00%	0.00%	29964	30864	<b>Complete Outage of 400kV RYTPP Generating Station of APGENCO:</b> During antecedent conditions, 400kV Kalikiri RYTPP Line -2 was under outage. Triggering incident was tripping of 400kV Kalikiri RYTPP Line -1 on over voltage stage-1 protection at RYTPP end and DT was received at Kalikiri end. Since both the lines connected to RYTPP got tripped, this resulted in complete outage of 400kV RYTPP generating station. There was no generation in RYTPP during this event.	1. 400kV Kalikiri RYTPP-1
2	GD-1	Andhra Pradesh	02-Nov-21 23:08	08-Nov-21 11:31	132 hrs 23 mins	0	0	0.00%	0.00%	30363	32814	<b>Complete Outage of 400kV RYTPP Generating Station of APGENCO:</b> During antecedent conditions, 400kV Kalikiri RYTPP Line -2 was under outage. Triggering incident was tripping of 400kV Kalikiri RYTPP Line -1 on over voltage stage-1 protection at RYTPP end and DT was received at Kalikiri end. Since both the lines connected to RYTPP got tripped, this resulted in complete outage of 400kV RYTPP generating station. There was no generation in RYTPP during this event.	1. 400kV Kalikiri RYTPP-1
3	GD-1	Tamil Nadu	05-Nov-21 02:59	05-Nov-21 07:02	4 hrs 3 mins	6	0	0.02%	0.00%	26621	25411	<b>Complete Outage of 230kV/33kV Pugalur Sprng Wind Station :</b> As per the report submitted, triggering incident was operation of over voltage St-1 protection at Pugalur sprng end and DT was received at Pugalur_PG end. Due to tripping of only connected line, this resulted in complete outage of 230kV/33kV Pugalur Sprng Wind Station due to loss of evacuation.	1. 230kV Pugalur sprng Pugalur_PG line-1
4	GD-1	Karnataka	16-Nov-21 06:17	16-Nov-21 07:32	1hr 15mins	207	65	0.72%	0.20%	28928	33256	<b>Multiple Trippings in 400kV/220kV Kaiga Generating Station and Complete Outage of 220kV Kadra PH, 220kV Kodalalli PH of KPCL and 220kV/110kV Karwar SS of KPTCL:</b> As per the report submitted, triggering incident was over loading of ICT-2 at 400kV/220kV Kaiga Generating station, which led to SPS operation. This resulted in tripping of 220kV Kaiga Kadra and 220kV Kaiga Kodalalli lines. Since 220kV Kadra PH and 220kV Kodalalli PH are radially connected to 400kV/220kV Kaiga Generating station, and 220kV/110kV Karwar SS was radially connected to 220kV Kadra PH, this resulted in complete outage of 220kV Kadra PH, 220kV Kodalalli PH of KPCL and 220kV/110kV Karwar SS of KPTCL.	1. 220kV Kaiga Kadra 2. 220kV Kaiga Kodalalli
5	GD-1	Karnataka	17-Nov-21 13:03	17-Nov-21 13:42	39mins	1600	25	4.61%	0.07%	34707	36231	<b>Complete Outage of 400kV BPS SS, 400kV/220kV Jagalur SS, 220kV/66kV Chitradurga SS, 220kV/66kV Tallak SS, &amp; 220kV/66kV Kudligi SS of KPTCL, 400kV YTPS GS of KPCL and Multiple tripping in 400kV/220kV JSWEL GS:</b> During antecedent conditions, 400kV BPS Pavagada line-1 was under LC for maintenance works. 220kV/66kV Kudligi SS is radially fed from 400kV/220kV Jagalur SS. Due to outage of 220kV Chitradurga Guttur line, 220kV/66kV Chitradurga SS was connected only to 400kV/220kV Jagalur SS. Triggering incident was LL fault in 400kV BPS Pavagada line-2. Due to tripping of 400kV BPS Pavagada line-2, flow in 220kV JSW Lingapur line-1 and 2 got increased. Subsequently due to SPS operation at JSW end, 220kV JSW Lingapur line-1 and 2 got tripped. Due to loss of 220kV and 400kV evacuation path, 400kV/220kV JSW GS went to islanded mode of operation. This further increased flow in 220kV Tallak Hiriyur line. With the tripping of 220kV Tallak Hiriyur line, running units at YTPS also got tripped due to loss of evacuation. This resulted in complete outage of 400kV BPS SS, 400kV/220kV Jagalur SS, 220kV/66kV Chitradurga SS, 220kV/66kV Tallak SS & 220kV/66kV Kudligi SS of KPTCL.	1. 220kV JSW Lingapur -1&2 2. 400kV BPS Pavagada line-2 3. 220kV Tallak Hiriyur_PG 4. YTPS Unit-1&2 5. JSW Unit-2,3,4,5&6
6	GD-1	Karnataka	19-Nov-21 16:16	19-Nov-21 17:00	44 mins	100	44	0.32%	0.13%	31107	33433	<b>Complete Outage of 220kV Kadra PH of KPCL and 220kV/110kV Karwar SS of KPTCL :</b> During antecedent conditions, 220kV Kadra Kodalalli line was under outage. As per the report submitted, triggering incident was tripping of 220kV Kaiga Kadra line at Kaiga end. Due to tripping of major power evacuation line, all the genering units of Kadra got tripped resulting in complete outage of 220kV Kadra PH. Since 220kV/110kV Karwar SS is radially fed from 220kV Kadra PH, incoming supply failure from 220kV Kadra PH resulted in complete outage of 220kV/110kV Karwar SS.	1. 220kV Kaiga Kadra
7	GD-1	Pondy	26-Nov-21 01:10	26-Nov-21 03:11	2hr 1mins	0	86	0.00%	0.31%	27257	27901	<b>Complete Outage of 230kV/110kV Villianur SS of Pondy:</b> During antecedent conditions, 230kV Villianur line was under outage conditions. Triggering incident was hand tripping of 230kV Villanur NLC TS-2 line. Due to outage of both the connected line, there was complete loss of supply at 230kV/110kV Villianur SS.	1. 230kV Villanur NLC TS-2
8	GD-1	Andhra Pradesh	27-Nov-21 09:28	27-Nov-21 11:28	2hrs	292	0	0.80%	0.00%	36317	35870	<b>Complete Outage of 400kV SEIL_P2 Generating Station:</b> During the antecedent conditions, 400kV SEIL_P2 NPS line-1 was under outage. As per the report submitted, triggering incident was LLG fault in 400kV SEIL_P2 NPS line-2. Due to loss of both the connected lines, there was complete outage of 400kV SEIL_P2 resulting in loss of generation of 292MW	1. 400kV SEIL_P2 NPS line-2
9	GD-1	Kerala	27-Nov-21 13:27	27-Nov-21 14:23	56mins	600	0	0	0	36749	34867	<b>Complete Outage of 220kV Idukki PH:</b> During antecedent conditions, all the elements were connected to Bus-2 at 220kV Idukki PH due to maintenance works. Triggering incident was fault in 220kV Idukki-New Pallom line due to heavy Lighting. At the same time, 220kV Bus-2 BBP operated at Idukki PH resulting in complete loss of supply.	1. Unit -2,3,4,5,6 2. 220kV Idukku Udumalpet 3. 220kV Idukki New Pallom 4. 220kV Idukki Lower Periyar-1&2 5. 220kV Idukki kalamassery 1&2 6. 220kV Idukki Kothamangalam 7. 220kV/66kV Transformer
10	GI-2	Tamil Nadu	04-Nov-21 19:21	04-Nov-21 22:20	2 hrs 59 mins	0	0	0.00%	0.00%	27783	31840	<b>Tripping of 400kV Bus-2 of 400kV/230kV Neyveli TS_2 SS:</b> As per the report submitted, triggering incident was fault in 400kV Neyveli TS_2 Salem line-2. At the same time, 400kV Bus-2 BBP operated and all the elements connected to Bus-2 got tripped resulting in the de-energisation of 400kV Bus-2 of 400kV/230kV Neyveli TS_2.	1. 400kV/230kV Neyveli_TS_2 ICT - 1 2. 400kV/230kV Neyveli_TS_2-Salem-2 3. 400kV Neyveli_TS_2- Neyvlei TS-2 (EXP) 4. 400kV Neyveli_TS_2- NeyvleiTS-1 (EXP)



**Details of Grid Events during the Month of November 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 Generation/Load in the Regional Grid during the Grid Event		Antecedent Generation/Load in the Regional Grid		Brief details of the event ( pre fault and post fault system conditions)	Name of Elements (Tripped/Manually opened)
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
11	GI-1	Tamil Nadu	06-Nov-21 13:00	06-Nov-21 13:16	16min	0	0	0.00%	0.00%	37711	36622	Tripping of 230kV Bus of 230kV/110kV/22kV Karaikudi TN SS of TANTRANSCO: During antecedent conditions, all the elements were connected to 230kV Bus-1 at Karaikudi_TN SS. As per the report submitted, triggering incident was failure of Bus-1 B-phase PT at Karaikudi_TN SS. Bus-1 BBP operated and all the elements connected to Bus-1 got tripped. This resulted in de-energisation of 230kV Bus of 230kV/110kV Karaikudi_TN SS on operation of BBP. 110kV/22kV Bus at Karaikudi_TN was intact during this event.	1. 230kV Karaikudi_TN Kavanur-1,2,3&4 2. 230kV Karaikudi_TN N T Kudi 2 3. 230kV Karaikudi_TN Karaikudi_PG 1&2 4. 230kV/110kV Auto Transformer-1 and 3
12	GI-1	Tamil Nadu	11-Nov-21 10:13	11-Nov-21 11:08	55mins	0	0	0.00%	0.00%	35901	36955	Tripping of 230kV Bus-1 of 400kV/230kV/110kV Alamy SS of TANTRANSCO: As per the report submitted, triggering incident was B-N fault in the 230kV Alamy OPG-1 feeder. Due to sluggish CB operation, LBB initiated and all the elements connected to 230kV Bus-1 got tripped at 400kV/230kV/110kV Alamy SS.	1. 400/230kV ICT 4 2. 230kV Alamy Manali-1 3. 230kV Alamy Thiuverkadu 4. 230kV Alamy OPG-1
13	GI-2	Karnataka	15-Nov-21 12:52	15-Nov-21 13:46	54 mins	0	0	0.00%	0.00%	37891	36527	Tripping of 400kV Bus-1 of 400kV/220kV Guttur SS of KPTCL: As per the report submitted, triggering incident was 400kV Bus-1 BBP operation due to DC supply failure. This resulted in tripping of all the elements connected to 400kV Bus-1 of 400kV/220kV Guttur SS.	1. 400kV Guttur Kaiga-1 2. 400kV Guttur Narendra-1 3. 400kV Guttur Doni 4. 400kV Guttur Beeranahalli-1 5. 400kV Guttur BTPS 6. 400kV/220kV Guttur ICT-2
14	GI-2	Telangana	17-Nov-21 05:53	17-Nov-21 11:18	5 hrs 25 mins	0	0	0.00%	0.00%	27776	31458	Tripping of 400kV Bus-2 of 765kV/400kV/220kV Maheshwaram_PG SS: As per the report submitted, triggering incident was failure of R-ph bus side isolator of 400kV Maheshwaram Mahaboobnagar line-2 at Maheshwaram end. Bus-2 BBP operated and all the main breakers connected to 400kV Bus-2 got tripped at 765kV/400kV/220kV Maheshwaram_PG SS. At the same time, 400kV/220kV Maheshwaram_TG ICT-1 & 2 got tripped on operation of REF protection and the same needs review.	1. 400kV/220kV Maheshwaram ICT-1 & 2
15	GI-1	Andhra Pradesh	21-Nov-21 13:30	21-Nov-21 14:15	1 hrs 19 mins	0	0	0.00%	0.00%	31114	30852	Tripping of 220kV Bus-1 of 220kV Gooty Switching Station of APTRANSCO: As per the report submitted, triggering incident was failure of B-Phase Jack Bus conductor disc insulator of 220kV Gooty Boyareddypalli feeder at Gooty end. Immediately, 220kV Bus-1 BBP operated and all the elements connected to Bus-1 got tripped.	1. 400/220kV Gooty ICT-1 & 3 2. 220kV Gooty Dhoni-1 3. 220kV Gooty SS Gooty RS 4. 220kV Gooty Ananthapur 5. 220kV Gooty Boyareddipalli

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



Sl No.	Category of Grid Event ( GI for 2/ GD-1 to GD-5)	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (HH:MM: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-I	Karong area of Manipur Power System	04-Nov-21 17:01	04-Nov-21 17:07	0:06:00	0	18	0.00%	0.72%	2603	2499	Karong area of Manipur Power System was connected with the rest of NER Grid through 132 kV Imphal (Yurembam)-Karong line. 132 kV Karong-Kohima line was under forced outage.  At 17:01 Hrs on 04.11.2021, 132 kV Imphal (Yurembam)-Karong tripped. Due to tripping of this element, Karong area of Manipur Power System was separated from rest of NER Grid and subsequently collapsed due to no source available in the area.  Power was extended to Karong area of Manipur Power System by charging 132 kV Imphal (Yurembam)-Karong line at 17:07 Hrs on 04.11.2021.	132 kV Imphal (Yurembam)-Karong line
2	GD-I	Karong area of Manipur Power System & Kohima area of Nagaland Power System	06-Nov-21 08:54	06-Nov-21 09:07	0:13:00	0	27	0.00%	1.45%	1492	1860	Karong area of Manipur Power System & Kohima area of Nagaland Power System were connected with the rest of NER Grid through 132 kV Dimapur(PG)-Kohima line, 132 kV Wokha-Kohima line and 132 kV Yurembam(Imphal) -Karong line. 132 kV Kohima-Meluri line was hand tripped by Nagaland due to Tower on verge of collapse.  At 08:54 Hrs on 06.11.2021, 132 kV Dimapur(PG)-Kohima line, 132 kV Wokha-Kohima line and 132 kV Yurembam(Imphal) -Karong line tripped. Due to tripping of these elements, Karong area of Manipur Power System & Kohima area of Nagaland Power System were separated from rest of NER Grid and subsequently collapsed due to no source available in these areas.  Power was extended to Karong area of Manipur Power System & Kohima area of Nagaland Power System by charging 132 kV Yurembam-Karong line at 09:07 Hrs on 06.11.2021 and 132 kV Dimapur - Kohima line at 09:59 Hrs on 06.11.2021 .	132 kV Dimapur(PG)-Kohima line, 132 kV Wokha-Kohima line and 132 kV Yurembam(Imphal) -Karong line
3	GD-I	Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	07-Nov-2021 10:40	07-Nov-2021 11:21	0:41:00	0	11	0.00%	0.63%	2037	1741	Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 kV Along - Pasighat line.  At 10:40 Hrs on 07.11.2021, 132 kV Along - Pasighat line tripped. Due to tripping of this element, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to no source available in these areas.  Power was extended to Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Along - Pasighat line at 11:21 Hrs on 07.11.2021.	132 kV Along - Pasighat line
4	GD-I	Kohima area of Nagaland Power System	08-Nov-2021 11:01	08-Nov-2021 11:50	0:49:00	0	15	0.00%	0.59%	2145	2550	Kohima area of Nagaland Power System was connected with the rest of NER Grid through 132 kV Karong-Kohima line, 132 kV Kohima-Wokha line and 132 kV Dimapur(PG) - Kohima line. 132 kV Kohima-Meluri line was hand tripped by Nagaland due to Tower on verge of collapse.  At 11:01 hrs on 08.11.2021, 132 kV Karong-Kohima line, 132 kV Kohima-Wokha line and 132 kV Dimapur(PG) - Kohima line 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 available in these areas.  Power was extended to Kohima area of Nagaland Power System by charging 132 kV Karong-Kohima line at 11:50 Hrs on 08.11.2021.	132 kV Karong-Kohima line, 132 kV Kohima-Wokha line and 132 kV Kohima-Dimapur(PG) line
5	GD-I	Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	11-Nov-2021 15:09	11-Nov-21 15:25	0:16:00	0	11	0.00%	0.56%	1882	1957	Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 kV Along - Pasighat line.  At 15:09 Hrs on 11.11.2021, 132 kV Along - Pasighat line tripped. Due to tripping of this element, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to no source available in these areas.  Power was extended to Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Along - Pasighat line at 15:25 Hrs on 11.11.2021.	132 kV Along - Pasighat line
6	GD-I	Churachandpur area of Manipur Power system	29-Nov-21 12:22	29-Nov-21 12:59	0:37:00	0	24	0.00%	1.29%	1641	1335	Churachandpur area of Manipur Power System was connected with the rest of NER Grid through 132 kV Ningthoukhong-Churachandpur D/C lines and 132 kV Kakching - Churachandpur line.  At around 12:22 Hrs on 29.11.2021, 132 kV Ningthoukhong - Churachandpur D/C lines and 132 kV Kakching - Churachandpur line tripped. Due to tripping of these elements, Churachandpur area of Manipur Power System was separated from rest of NER Grid and subsequently collapsed due to no source available in this area.  Power was extended to Churachandpur area of Manipur Power System by charging 132 kV Ningthoukhong - Churachandpur D/C line at 12:59 Hrs on 29.11.2021.	132 kV Ningthoukhong-Churachandpur D/C lines and 132 kV Churachandpur - Kakching line
7	GI-II	Tripura	02-Nov-21 20:34	02-Nov-21 22:30	1:56	202	0	9%	0%	2179	2521	Palatana GTG-1 & Palatana STG-1 tripped at 20:34 Hrs on 02-11-21 due to Flame Failure. Revision done from Block No. 91 on 02-11-21.	Palatana GTG-1 & Palatana STG-1
8	GI-II	Assam	03-Nov-21 12:23	03-Nov-21 14:00	1:37	10	0	1%	0%	1942	2413	AGBPP Unit 9 tripped at 12:23 Hrs on 03-11-21 due to Control System Failure. Revision done from Block No. 57 on 03-11-21.	AGBPP Unit 9
9	GI-I	Assam	03-Nov-21 14:19	03-Nov-21 16:30	2:11	21	0	1%	0%	1948	2551	Kopili St 2 Unit I tripped at 14:19 hours on 03-11-21 due to Excitation Failure. Revision done from Block No. 67 on 03-11-21.	Kopili St 2 Unit I
10	GI-II	Tripura	05-Nov-21 08:53	05-Nov-21 10:30	1:37	273	0	12%	0%	2244	1837	Palatana GTG-1 & Palatana STG-1 tripped at 08:53 Hrs on 05-11-21 due to Low Drum Level. Revision done from Block No. 43 on 05-11-21.	Palatana GTG-1 & Palatana STG-1
11	GI-I	Assam	10-Nov-21 12:45	10-Nov-21 14:30	1:45	21	0	1%	0%	1571	1963	Kopili St 2 Unit I tripped at 12:45 hours on 10-11-21 due to Governor problem. Revision done from Block No. 59 on 10-11-21.	Kopili St 2 Unit I
12	GI-I	Assam	11-Nov-21 18:57	11-Nov-21 20:00	1:03	24	0	1%	0%	2922	2773	Khandong Unit 1 tripped at 18:57 hours on 11-11-21 due to Non-Electrical Lockout. Revision done from Block No. 81 on 11-11-21.	Khandong Unit 1
13	GI-II	Assam	11-Nov-21 20:12	11-Nov-21 22:00	1:48	228	0	8%	0%	2726	2536	BgTPP Unit 2 tripped at 20:12 hours on 11-11-21 due to high pressure furnace. Revision done from Block No. 89 on 11-11-21.	BgTPP Unit 2
14	GI-II	Assam	15-Nov-21 23:23	16-Nov-21 01:00	1:37	107	0	5%	0%	2068	1573	Kameng Unit 3 tripped at 23:23 hours on 15-11-21 due to LGB high temperature. Revision done from Block No.4 on 16-11-21.	Kameng Unit 3
15	GI-II	Assam	18-Nov-21 11:29	18-Nov-21 13:00	1:31	58	0	3%	0%	2298	1831	AGBPP Unit 2 & 4 tripped at 11:29 hours on 18-11-21 due to tripping of Gas Booster compressor 1. Revision done from Block No.53 on 18-11-21.	AGBPP Unit 2 & 4
16	GI-II	Assam	20-Nov-21 02:19	20-Nov-21 04:00	1:41	25	0	1%	0%	1994	1427	AGBPP Unit 6 tripped at 02:19 hours on 20-11-21 due to Excitation problem. Revision done from Block No.17 on 20-11-21.	AGBPP Unit 6