Details of Grid Events during the Month of February 2023 in Northern Region

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	GPID-INDIA	

								% Loss of generation / loss of load					GRID-INDIA
SI 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 genera during th	tion / loss of load e Grid Event	w.r.t Antecedent Ge the Regional Grid Ever	neration/Load in during the Grid	Antecedent Generati Regional C	on/Load in the 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-2	Punjab	03-Feb-2023 11:25	03-Feb-2023 15:55	4:30	680	0	1.260	0.000	53980	56712	1. During antecedent condition, 220kV Rajpura-Ablowal (PS) ckt-2 was under shutdown and work was being done on the line with the help of hydraulic crane. 200kW Unit-182 x Rajpura TPS were running and generating approx. 668kW & 808kW respectively. 2. As reported, 31 11.25hrs, while work was being done on 220kV Rajpura-Ablowal (PS) ckt-2, hydraulic crane came into induction zone of 220kV Rajpura-Ablowal (PS) ckt-1 and an accident happened. Simultaneously, bus bar protection at 220kV side of early 220kV Rajpura-PS) became dead. 3. At the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all or through of distance protection operation. 3. At the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise) or through of distance protection operation. 2. As the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise) or through or distance protection operation. 2. As the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise) or distance protection operation. 2. As the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise). 2. As the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise). 2. As the same time, 440 kV Rajpura-PS(95)-Rajpural(PS) (PS) ckt-1 & Ckt-2 all otherwise). 2. As the same time, 440 kV Rajpura-PS. No load loss in Purijab control area (as reported by SLOC-Punjab).	11 400/220 kV 500 MVA (CT 2 at Rajpura/PS) 21 400/220 kV 500 MVA (CT 3 at Rajpura/PS) 21 400/220 kV 500 MVA (CT 3 at Rajpura/PS) 41 200/V Rajpura-Devigan (PS) (kt. 1 5 200/V Rajpura-Devigan (PS) (kt. 2 61 200/V Rajpura-Devigan (PS) (kt. 2 61 200/V Rajpura-Devigan (PS) (kt. 2 61 200/V Rajpura-Devigan (PS) (kt. 2 81 400 VK Rajpura TSF/SSG-Rajpura/PS) (PS) (Kt. 1 91 400 VK Rajpura TSF/SSG-Rajpura/PS) (PS) (Kt. 2 101 700 MVR Rajpura (NPL) TPS - UNIT 2
2	GI-2	Rajasthan	08-Feb-2023 12:25	08-Feb-2023 15:26	3:01	1700 (drop in RE generation)				52963	57188	1. At 12.25.09.404 hrs, 125MVAr Bus reactor at 400kV Fatehgarh1 Pooling S/s was opened. 2. Increase in phase voltage of "10kV at 765kW Blander[PG], "11kV at 765kV Fatehgarh2[PG] & "14kV at 765kV Bhadis[PG] is observed as per PMUI. 3. At the same time, drop in 8 generation connected at 1575 RE pooling station in Rajasthan RE generation complex also observed, which lot for further increase in voltage followed by further reduction in RE generation (MW reduction at 8E stations on HWT operation suspected). 4. As per SCADA, foul reduction of approx. 1700MW RE generation complex observed. 5. As 12.255.025.15.n., 755W Bhadis-Bikaner ckt-1 tripped on over voltage protection operation at Bhadis[PG] end. 6. No tripping of elements (likes/transformer) dedicated to RE stations recorded (as per SCADA SOE). 7. Within 03 minutes of the triggering of event, approx. 1200MW RE generation recovered.	1) 765kV Bhadle-Bikaner ckt-1
3	GI-2	Rajasthan	09-Feb-2023 11:45	09-Feb-2023 14:52	3:07	4459 (drop in RE generation)				52667	58516	1. At 11.45hrs, line reactor at Bhadia end of 765kV Bhadia-Bikaner ckt-1 opened. As per PMU at Fatehgarh2/PG), voltage increased from 745kV to 775kV with the opening of line reactor. 2. At the same time, reduction in Regeneration connected at 15Ts RE pooling stations occurred which led to further increase in voltage followed by further reduction in RE generation. 3. As per SCADA, total reduction in RE generation. 4. Due to significant reduction of RE generation, further over voltage occurred in transmission network at 15Ts RE pooling stations. On this over voltage 76xW Bhadia-74kmer ckt-1, 765kV Bhadia-74kmer ckt-1, 765kV Bhadia-74kmer ckt-1 & 755kV Bhadia-74kmer ckt-1 tripped on over voltage protection operation.	1) 765kV Bhadlaz-Ajmer ckt-1 2) 765kV Bhadlaz-Bikaner ckt-1 3) 765kV Bhadla-Fatehgarh2 ckt-1
4	GI-2	Rajasthan	09-Feb-2023 11:57	09-Feb-2023 16:25	4:28	3678 (drop in RE generation)				52472	58424	1. At 11:57hrs, charging attempt of 765kV Bhadla2-Ajmer ckt:1 was taken which further led to over voltage. line didn't hold and trip. 2. At the same time, reduction in RE generation connected at ISTS RE pooling stations occurred. 3. As per SCADA, total reduction in RE generation of approx. 3678MW is observed. 4. At the same time, 765kV Bhadla2-Ajmer ckt-2 tripped on over voltage.	1) 765kV Bhadlaz-Ajmer ckt-2
5	GI-2	Rajasthan	09-Feb-2023 12:03	09-Feb-2023 13:35	1:32	2993 (drop in RE generation)				51106	58020	1. At 12.03hrs, charging attempt of 765kV Bhadia2-Bikaner ckt-1 was taken which further led to over voltage, line didn't hold and trip. 2. At the same time, reduction in RE generation connected at ISTS RE pooling stations occurred. 3. As per SCADA, total reduction in RE generation of approx. 2993MW is observed. 4. At the same time, 765kV Bhadia2-Bitehgah2 ckt-1 tripped on over voltage.	1) 765kV Bhodisz-Fatehgarh2 ckt-1
6	GI-2	Rajasthan	09-Feb-2023 12:17	09-Feb-2023 18:32	6:15	3379 (drop in RE generation)				51013	57623	1. At 121 Thrs, during fluctuation in voltage, reduction in RE generation connected at ISTS RE pooling stations occurred. 2. As per SCADA SOR, no switching is observed during that time at 220 kV & above level. 3. As per SCADA, 1014 reduction in RE generation of approx. 3737MW is observed. 4. At the same time, 765kV Bhadla2-Fatehgañ2 ckt-2 tripped on over voltage.	1) 765kV Bhadia2-Fatehgarh2 ckt-2
7	GD-1	Rajasthan	09-Feb-2023 12:29	09-Feb-2023 20:09	7:40	3055 (drop in RE generation)				50568	57227	During antecedent condition, RE generation evacuating from Fatehgarh2 were being back downed to facilitate the charging of 765kV lines at Fatehgarh2, these switching led to the fluctuation in violage. 2. At 12-27kms, during fluctuation in violage, reduction in RE generation connected at 1575 RE pooling stations occurred. 3. At the same fluctuation, TSASV Badial-Fatehgarh2 CALS 10 profession on over violage. 4. With the tripping of 765kV Badial-Fatehgarh2 CALS 10 profession on over violage. 5. As per SCROA, total reduction in RE generation of approx. 3055MW is observed.	1) 765kV Bhadla-Fatehgarh2 ckt-2
8	GI-2	Rajasthan	10-Feb-2023 11:31	10-Feb-2023 20:16	8:45	300MW loss & total 3100 drop in RE generation				52520	58441	1. At 11:31:24:440 hrs, 220kV Fatehparh2-EDEN ckt tripped on R-V phase to phase fault, fault occurred due to snapping of conductor. As per PMLf, fault cleared within 100msce 2. On this fault, dring voltage dis, gailgrindar drop in Re generation connected at 1515 RE pooling station in Rajasthan RE generation complex also observed (suspected due to LVRT operation.) 3. As per SCADA, four deduction of approx. 3100MW RE generation connected at 1515 RE pooling station in Rajasthan RE generation complex observed. 4. No tripping of dements, (lines/transformer) dedicated to RE stations recorded (as per SCADA SOE). 5. Within 04 minutes of the triggering of event, approx. 2260MW RE generation recovered.	1) 220kV Fatehgarh2-EDEN ckt

Details of Grid Events during the Month of February 2023 in Northern Region



								Details of G	ria Events a	uring the Mon	in or rebru	ary 2023 in Northern Region	GRID-INDIA
SI 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 genera during th	tion / loss of load e Grid Event	% Loss of generation w.r.t Antecedent Generation the Regional Grid of Even	on / loss of load neration/Load in during the Grid at	Antecedent Generation Regional G		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
	(GI 1or 2/ GD-1 to GD-5)		Grid Event		(HESISI)	Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
9	GD-1	Haryana	12-Feb-2023 15:11	12-Feb-2023 16:50	1:39	0	250	0.000	0.546	46030	45779		1) 220W Hissar JA[Har]-Narwana ckt 2) 220W Hissar (MHar)-Massudpur ckt-1 2) 220W Hissar (MHar)-Massudpur ckt-1 4) 220W Hissar (MHar)-Massudpur ckt-2 4) 220W Hissar (MHar)-Massudpur ckt-2 5) 220W Hissar (MHar)-Massudpur ckt-2 6) 220W Hissar (MHar)-Hissar (MHar) ckt-2 6) 220W Hissar (MHar)-Hissar (MHar) ckt-2 8) 220W Hissar (MHar)-Hissar (MHar) ckt-2 8) 220W Hissar (MHAR)-Hissar (MHar) ckt-2 10) 220/123W (TcT-1 at Hissar, IA[MHar 11) 220/123W Hissar (MHAR)-Hissar (MHar) 11) 220/123W Hissar (MHAR)-Hissar (MHar) 12) 220/123W Hissar (MHAR)-Hissar (MHar) 12) 220/123W Hissar (MHAR)-Hissar (MHAR) 12) 220W Hissar (MHAR)-Hissar (MHAR) 13) 220W Hissar (MHAR)-Hissar (MHAR) 14) 220W Hissar (MHAR)-Hissar (MHAR) 15) 220W Hissar (MHAR)-Hissar (MHAR) 16) 24 Hissar (MHAR) 16) 25 Hissar (MHAR) 17) 26 Hissar (MHAR) 18) 27 Hissar (MHAR) 18) 27 Hissar (MHAR) 18) 27 Hissar (MHAR) 18) 28 Hissar (MHAR
10	GD-1	Haryana	14-feb-2023 11:19	14-Feb-2023 12:16	0:57	0	220	0.000	0.391	51083	56262	5. As per schunk, change in demand di approx. 220000 in naryana control area (as per schunk data)	1] 2206V Hissar (AlPhar)-Narwana ckt 2] 2206V Hissar (AlPhar)-Naswapur ckt-1 2] 2206V Hissar (AlPhar)-Massudpur ckt-2 4] 2206V Hissar (AlPhar)-Massudpur ckt-2 4] 2206V Hissar (Blah)-Mannel (Bl. ckt-1 5) 2206V Hissar (Blah)-Mannel (Bl. ckt-2 6] 2206V Hissar (Blah)-Mannel (Bl. ckt-2 6] 2206V Hissar (Blah)-Mannel (Bl. ckt-2 7) 2206V Hissar (Blah)-Mannel (Bl. ckt-2 7) 2206V Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mand Szeel (Hissar (Blah) 2] 2206V Hissar (Blah)-Mand Szeel (Hissar (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mand Szeel (Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah)-Mannel (Blah) 2] 2206V Hissar (Blah)-Mannel (Blah)-
11	GI-1	Jammu & Kashmir	15-Feb-2023 13:09	15-Feb-2023 20:29	7:20	0	115	0.000	0.200	51951	57400	1. As reported, at 13:09 hrs, conductor of 8- phase of 220 KV Kishenpur(PG)-Ramban(PDD) ckt-1 snapped between gantry string and tower location no. kp101 near Kishenpur(PG) end. 2. As per sending end FIR by CPCZ, line tripped on 8-M fault, with fault current tb=21.83kA and fault location= 0.091kM from Kishenpur(PG) end. 3. As per PMU, B-N fault with clearance time of 80 msec is observed. 4. As per SCADA, change in demand of approx. 115MW in J&K control area (as per SCADA data)	1] 220 KV Kishengur(PG)-Ramban(PDD) Ckt-1 2] 220kV Mirbazar– Ramban (PDD) ckt
12	GD-1	Haryana	17-Feb-2023 05:57	17-Feb-2023 11:50	5:53	0	105	0.000	0.242	38093	43474	1. 220/132kV Sagwan 5/s have double main single breaker bus scheme. It has power source through 220 KV Hissar[PG]- Sagwan[Har] Ckt-182. 2. During antecedent condition, 220 KV Hissar[PG]-Sagwan[Har] Ckt-1 was already out as it tripped on R-N phase to earth fault at 03-20 ins on 17th Feb 23 (Zone-1, Distance of 13.3 km from Sagwan[Har] & Zone-1, Distance of 10.00 km from Hissar[PG]). 3. Keeppreta, 9. GS-575 no 17th Feb 27, R-N phase to earth fault occurred on 250 K Hissar[PG] Sagwan[Har] Ckt-2 (Zone-1, Distance of 13.3 km from Sagwan[Har] & Zone-1, Distance of 9 shot from Hissar[PG]). 4. With the tripping of 20 KV Hissar[PG] Sagwan[Har] Ckt-2 (Zone-1, Zone-1, Distance of 13.3 km from Sagwan[Har] R-Sagwan[Har] Ckt-2 (Zone-1, Zone-1, Distance of 13.3 km from Sagwan[Har] R-Sagwan[Har] Ckt-2 (Zone-1, Zone-1, Distance of 13.3 km from Sagwan[Har] R-Sagwan[Har] R-	1) 220 kV Hisser(PG)-Sagwan(Har) ckt 2 2) 220 kV Sagwan-Haharwell ckt 1 3)220 kV Sagwan-Haharwell ckt 2
13	GI-1	Rajasthan	17-Feb-2023 14:37	17-feb-2023 17:35	2:58	0	210	0.000	0.387	51685	54235	1. As reported, at 14.37hrs, 220 KV Bhinmal(PG)-Bhinmal(RS) Clk-1. 8.2 tripped due to B-N phase to earth fault. 2. As per sending end FIR by CPCCL, 220 KV Bhinmal(PG)-Bhinmal(RS) Ckt-1. 8.2 tripped due to B-N phase to earth fault with fault location of 10 has mad 20.5 hm respectively from Bhinmal(PG) end and fault current of 14.12 kA and 7.57 kA respectively. 3. As per PMU at 400 kV Bhinmal(PG), B-N fault with delayed clearance time of 880 msec is Observed. 4. As per SCADA, change in demand of approx. 210MW in Rajasthan control area (as per SCADA data)	1] 220 KV Bhinmal[PG]-Bhinmal[RS] Ctt-1 2] 220 KV Bhinmal[PG]-Bhinmal[RS] Ctt-2
14	GI-1	Uttar Pradesh	19-Feb-2023 05:29	19-Feb-2023 08:06	2:37	0	0	0.000	0.000	38066	42580	1. As per information received from SLDC-UP, during antecedent condition, 220 KV Meerut[PG]-Modipuram(UP) (PG) Ckt-1. & 2, 220 KV Modipuram(UP) Shatabdinagar(UP) and 220/132 kV 200 MVAI (Cf. 1. & 2. at Modipuram(UP) were connected to Bus-1 and 220 KV Modipuram(UP) series connected to Bus-1 and 220 KV Modipuram(UP) series connected to Bus-2 and bus coupler was open. 2. As reported, at 05.29hrs, 220 KV Meerut[PG]-Modipuram(UP) (PG) Ckt-1 tripped on Y-N phase to earth fault, zone 2, with fault current of 2657.3 As and fault location of 20.3 km from Modipuram(UP) end. 3. As per rife received from SLDC UP, due to bus be protection operation, 220 KV Meerut[PG]-Modipuram(UP) (PG) Ckt-2, 220 KV Modipuram(UP) (PG) Ckt-2, 220 KV Modipuram(UP) (PG), VMpAD-200 can floated to Modipuram(UP) also got tripped at the same time. 2. As per SCADA, no load fors in Uttar Prateint control area (a) per SCADA) is observed.	1) 220 KV Meenut(PG)-Modipuram(UP) (PG) Ckt.1 2) 220 KV Meenut(PG)-Modipuram(UP) (PG) Ckt.2 3) 220 KV Meenut(PG)-Modipuram(UP)-Statabdmagar(UP) ckt. 4) 220(312 kV 020 MVA KCT 1 at Modipuram(UP) 5) 220/132 kV 200 MVA KCT 2 at Modipuram(UP)

श्रिड-इंडिया GRID-INDIA Details of Grid Events during the Month of February 2023 in Northern Region % Loss of generation / loss of load w.r.t Antecedent Generation/Load is the Regional Grid during the Grid ategory of Grie Event Duration (HH:MM) Brief details of the event (pre fault and post fault system conditions) Grid Even (GI 1or 2/ GD-1 to GD-5 Generation Loss(MW) % Generation Loss(MW) % Load Loss (MW) Antecedent Generation (MW) ecedent Load Load Loss (MW (MW) During the antecedent condition, voltage at SBE6PL was 243 kV and MVA loading of 400/220 kV 500 MVA ICT 1 & 2 was 503 MVA (each). 2. As reported, at 12:39 hrs. 220 kV Adani Fatehgarh Solar park-Adani Solar Park PSS2 ckt tripped due to SPS Stage-I operation at Adani Fatehgarh Solar park. 3. At the same time, 220 kV Bhadla[PG]-ESSEL IPSS2 (SBE6PL) ckt tripped due to over voltage. (drop in NR 4. As per PMU, a voltage rise of 56 kV and 60 kV are respectively observed at 400 kV Bhadla(PG) and 400 kV Fatehgarh(IP). After 1) 220 kV Adani Fatehgarh Solar park-Adani Solar Park PSS2 ckt 19-Feb-2023 12:39 19-Feb-2023 13:09 GI-1 Raiasthan 0:30 51369 52867 Solar the incidence, voltage oscillations at 400 kV Bhadla(PG) and 400 kV Fatehgarh(IP) reduced. 2) 220 kV Bhadla(PG)-ESSEL IPSS2 (SBE6PL) ckt 5. As per SCADA, generation loss of approx. 280MW at SBE6PL and approx. 350MW at AHEJ4L occurred 6. At the same time, approx. 100 MW dip in generation observed at APTFL (connected to Bhadla(PG)), which restored within 3-4 7. Change in NR Solar generation of approx. 850 MW and change in Rajasthan Solar generation of approx. 125 MW are observed (as per SCADA). 1. During antecedent condition, 40 MW Unit-2 & 3 were running and generating approx. 12 MW and 13 MW respectively. All the 1) 220 KV Tanakpur(NH)-CB Ganj(UP) Ckt elements i.e., unit-2 & 3, Sitarganj line(carrying 48MW towards Sitarganj), CB Ganj line (carrying 58MW towards Tanakpur) & 220/132/VICT (carrying no active power) were connected at 220/V Bus-2, 220/V Bus-1 was under shutdown. 2. As reported, at 12:16hrs, bus har protection operated due to maloperation during testing of relay. Hence, all the elements 2) 220 KV Tanakpur(NH)-Sitarganj(PG) Ckt 3) 40MW Unit-2 at Tanakpur HEP 21-Feb-2023 12:16 21-Feb-2023 13:57 49111 1) 40MW Unit-3 at Tanakpur HEP connected to 220 kV Rus-2 tripped and S/s became dead 3. As per PMU at Meerut(PG), no fault in system is observed. 4. As per SCADA, generation loss of approx. 25MW occurred at Tanakpur HEP observed. 1. As reported, at 18:29hrs, 400 kV Kala Amb(PKTL)-Wangtoo_GIS(HP) Ckt-1 tripped due to Y-N phase to earth fault with fault current of 5.9kA and distance of 43.2km from Kala Amb end. Also, 400 kV Kala Amb(PKTL)-Sorang(Greenko) Ckt-1 tripped due to R-N double phase to ground fault with fault current of Iv=Ib=5 163kA and distance of 85 39km from Sorang end 24. As per receiving end FIR by Wangtoo, GIS(HP), tripping occurred at bay no. 410 (of 400 kV Kala Amb(PKTL)-Wangtoo_GIS(HP) Ckt-1) as a consequence of Y-N phase to ground fault with fault current of 3.667kA from Wangtoo end. As per receiving end FIR by Sorang(Greenko), 400 kV Kala Amb(PKTL)-Sorang(Greenko) Ckt-1 tripped due to over-current and earth-fault protection 2) 400 kV Kala Amb(PKTL)-Wangtoo GIS(HP) Ckt GI-2 Himachal Pradesh 21-Feb-2023 18:29 21-Feb-2023 20:39 2:10 500 1.015 0.000 40240 52272 As per PMU at 400 kV Abdullapur(PG), Y-B fault with clearance time of 120 msec is observed 4. Due to tripping of both 400 kV Wangtoo(HP)-Kala Amb ckt and 400 kV Sorang HEP-Kala Amb ckt. case-6 of SPS for reliable evacuation of power from Nathpa Jhakri, Rampur, Karcham hydro generation complex operated. On operation of SPS, 250MW Unit-2 & 4 at Karcham Wangtoo HPS tripped. 5. As per SCADA, reduction in generation of approx. 500MW at Karcham and NR hydro generation reduction of approx. 845MW i 1. As reported, at 06: 44 hrs. 400 KV Raiwest(RW)-Kankani (RS) Ckt and 400 KV Barmer(RS)-Raiwest(RW) Ckt tripped due to fog at Rajwest. 2. 400 KV Barmer(RS)-Rajwest(RW) (RS) Ckt tripped on R-Y phase to phase fault with a distance of 8.672 km and fault current of 3.890 kA from Barmer(RS) end. 3. Further; 400 KV Rajwest[RW]-Kankani (RS) Ckt also tripped on R-N phase to earth fault with a distance of 212.8 km and fault current of 1485 kA from Kankani[KS] end. A. Ka reported, a 17575 kms, 400 KV Rajwest[RW]-Jodhpur[RS) Ckt also tripped on B-N phase to earth fault, with a distance of 159) 400 KV Palwest(PW)-Kankani (PS) Ckt) 400 KV Barmer(RS)-Rajwest(RW) Ckt 3) 400 KV Rajwest(RW)-Jodhpur (RS) Ckt 23-Feb-2023 07:28 GI-2 Rajasthan 23-Feb-2023 06:44 0:44 0 0.000 0.000 48866 52039 km, and fault current of 1.09 kA from Jodhpur(RS) end and with a distance of 8.32 km and fault current of 8.214 kA from Rajwes Ani, and soil current of 1.55 An into Joseph Charles and war at diseastice of 3.52 km and sour current of 3.524 An into happen and (20ne-1). As per TR received from Jodhpur(RS) and, during patrolling of line, snapped jumper at location 13 was found and same was attended by other and (400KV GSS BARMER) by taking Emergency shutdown. 5. As 400 KV Rajwest(RW)-Kankani (RS) Ckt revived before 400 KV Rajwest(RW)-Jodhpur (RS) Ckt tripped, hence units connected As du Ux V Rajwest(RW)-Jankan (Rs) LXT revived before 40U XV Rajwest(RW)-Jodnpur (Rs) LXT trippe at 400/220 KV Rajwest(raj) did not trip. As per SCADA, no load loss/generation loss occurred in Rajasthan. As per PMU at Bhinmal(PG), R-N phase to earth fault with fault clearing time of 80msec is observed. Other Events At 12:08hrs, during fluctuation in voltage, reduction in RE generation connected at ISTS RE pooling stations occurred. As per SCADA SOE, no switching is observed during that time at 220 kV & above level. vent of RE generation drop of approx. 1444MW in RE complex in Rajasthan 09-Feb-2023 12:08 Raiasthan (drop in RE 51063.000 57977 generation 3. As per SCADA, total reduction in RE generation of approx. 1444MW is observed. At 12:12hrs, during fluctuation in voltage, reduction in RE generation connected at ISTS RE pooling stations occurred. As per SCADA SOE, no switching is observed during that time at 220 kV & above level. 1288 Event of RE generation drop of approx. 1288MW in RE complex in Raiasthan. 00-Eeh-2023 12:12 drop in RE 51099.000 58013 As per SCADA, total reduction in RE generation of approx. 1288MW is observed. generation

51119.000

57729

09-Feb-2023 12:23

(drop in RE

generation)

Raiasthan

At 12:23hrs, during fluctuation in voltage, reduction in RE generation connected at ISTS RE pooling stations occurred.
 As per SCADA SOE, no switching is observed during that time at 220 kV & above level.

3. As per SCADA, total reduction in RE generation of approx. 2273MW is observed.

event of RE generation drop of approx, 2273MW in RE complex in Raiasthan

Details of Grid Events during the Month of February 2023 in Western Region



SI 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-2	WR	05-Feb-23 19:33	05-Feb-23 20:55	1:22	-	-	-	-	60430	57722	Tripping of 1. 400 kV Asoj Bus 2 2. 400 kV Asoj Bus 2 tripped on LBB operation due to failure of R phase bushing of bus reactor. All elements connected to 400 kV Asoj Bus 2 tripped. No load loss occurred due to the event. Tripping of 2. 400 kV Asoj Bus 2 2. 400 kV Asoj Bus 2 3. 400 kV Asoj-Wanakbori 1 4. 400 kV Asoj-Chorania 2 5. 400 kV Asoj-Nadodara 2
2	GD-1	WR	13-Feb-23 01:29	13-Feb-23 05:50	4:21	458	-	0.008	-	56776	52078	At 01:29 hrs / 13-02-2023, 400 kV Bilaspur-MCCPL line tripped due to B phase jumper of line broken at Bilaspur end, leading to total blackout at MCCPL and ACBIL generating stations as 400kV Bilaspur-ACBIL line was under planned Shutdown for diversion work. Due to these trippings 458 MW generation loss reported at ACBIL and MCCPL.
3	GD-1	WR	13-Feb-23 18:42	13-Feb-23 19:09	0:27	-	80	-	0.001	64438	62825	At 18:42 hrs / 13-02-2023, 220 kV Mulund Buses 1&2 tripped due to R-ph PT blast & led to black out of the substation. 220 kV Kalwa – Mulund 1 & 2, 220 kV Mulund – Trombay, 220 kV Mulund – Bhandup lines and four no. of 220/22 kV ICTs tripped. Due to these trippings load loss of around 80 MW occurred. Tripping of 1.220 kV Mulund–Bhandup 1 & 2 2.220 kV Mulund – Trombay 4.220 kV Mulund–Trombay 4.220 kV Mulund–Bhandup
4	GI-2	WR	21-Feb-23 02:12	21-Feb-23 04:55	2:43	-	-	-	-	61616	56267	At 02:12 hrs/21-02-2023, 400 kV Jetpur Bus1 tripped on Busbar protection due to R-phase CT blast in 400 kV Amreli 1 bay. 400 kV Amreli-Jetpur 1, 400 kV CGPL-Jetpur 1,400 kV Jetpur B/R, 400/220 kV Jetpur ICTs 1&3 tripped along with the Bus. No load loss occured due to the event. 4.00/220 kV Jetpur-ICTs 1 and 3 5. 400 kV Jetpur B/R
5	GI-1	WR	21-Feb-23 15:23	21-Feb-23 15:30	0:07	-	200	-	0.003	70646	66789	At 15:23 hrs/21-02-2023, 220/110 kV Thivim ICTs 1,2&3 tripped on Over-Current protection operation. Prior to the event 110KV Thivim-ponda 2 was charged due to low voltage at Ponda substation due to which the ICTs got overloaded. Due to these trippings load loss of 200 MW occurred. Tripping of 1. 220/110 kV Thivim ICTs 1,2&3 occurred.
6	GI-1	WR	22-Feb-23 15:31	22-Feb-23 15:36	0:05	-	215	-	0.003	68197	66966	At 15:31 hrs/22-02-2023, 220/110 kV Thivim-ICTs 1,2&3 tripped on Over-Current protection operation due to sudden increase in Konkan Railways traction load. Due to these trippings load loss of 200 MW occurred. Tripping of 1. 220/110 kV Thivim ICTs 1,2&3

Details of Grid Events during the Month of February 2023 in Southern Region

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AA	ग्रिड-इंडिया GRID-INDIA
	GRID-INDIA

												February 2025 in Southern Region	GRID-INDIA	
SI No.	Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration	Loss of generatio during the C	n / loss of load Grid Event	% Loss of gener load w.r.t A Generation/l Regional Grid d Eve	ntecedent Load in the uring the Grid	Antecedent Generati Regional C	on/Load in the 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)		2.4.11			Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)			
1	GD-1	Karnataka	04-Feb-23 13:40	04-Feb-23 13:56	16mins	0	89	0.00%	0.17%	48919	53599	Multiple Trippings at 220V/66kV Malur SS and Complete Outage of 220kV/66kV Vikas Tech park, 220kV/66kV Sarjapur SS, and 220kV/66kV Exora SS of KPTCL: During antecedent conditions, 220V/66kV Malur SS was operating with bus split condition at 220kV level. 220kV Hoody Malur line was feeding 220kV/66kV Vikas Tech park, 220kV/66kV Sarjapur SS and 220kV/66kV Exora SS radially from one 220kV bus at 220V/66kV Malur SS. As per the reports sbmitted, the triggering incident was R-N fault in 220kV Hoody Malur line and the line tripped. Tripping of the only source resulted in loss of supply to 220kV/66kV Vikas Tech park, 220kV/66kV Sarjapur SS, and 220kV/66kV Exora SS.	1. 220kV Hoody Malur	
2	GD-1	Andhra Pradesh	15-Feb-23 13:28	15-Feb-23 13:40	12mins	16	0	0.03%	0.00%	52868	56624	Complete Outage of 220kV Donkarai PH of APGENCO: As per the reports submitted, the triggering incident was suspected high resistance B-N fault in 220kV Lower Sileru Donkarai line. At both ends, zone-2 protection operated and the line tripped. At the same time, 220kV Upper Sileru Donkarai line tripped only at Upper Sileru end on DEF operation. Tripping of both connected lines resulted in complete outage of 220kV Donkarai PH.	220kV Lower Sileru Donkarai 2. 220kV Upper Sileru Donkarai	
3	GD-1	Karnataka	22-Feb-23 00:00	22-Feb-23 01:34	1hr 34mins	0	92	0.00%	0.20%	38172	46986	Complete Outage of 220kV/110kV Raichur SS of KPTCL and 220kV Upper Jurala PH of APGENCO: During antecedent conditions, 220kV Upper Jurala PH was being radially fed from 220kV/110kV Raichur SS. As per the reports submitted, the triggering incident was RY-N fault in 110kV Raichur APMC Line-2. 220kV/110kV Transformers tripped at Raichur end on HV side OC protection. At the same time, 220kV Raichur RTPS line-182 tripped and further details are awaited. This resulted in complete outage of 220kV/110kV Raichur SS and 220kV Upper Jurala PH.	220kV/110kV 100MVA Raichur Transformer-1&2 220kV Raichur RTPS line-1 and 2	
4	GD-1	Karnataka	25-Feb-23 07:07	25-Feb-23 08:53	1hr 46mins	7	120	0.02%	0.24%	41380	50470	Complete Outage of 220kV/33kV Gopalpura SS of Suzlon_KA and 220kV/66kV HN Pura SS of KPTCL: 220kV/66kV HN Pura SS is being radially fed from 220kV/33kV Gopalpura SS. As per the reports submitted, the triggering incident was R-Y fault in 220kV Gopalpura Hassan line and the line tripped at both ends. At the same time, 220kV Gopalpura Tubinkere fine tripped at Tubinkere ed no zone-2 protection. Tripping of both these lines led to complete outage of 220kV/33kV Gopalpura SS and 220kV/66kV HN Pura SS.	220kV Gopalpura Hassan 2. 220kV Gopalpura Tubinkere	
5	GD-1	Karnataka	25-Feb-23 14:48	25-Feb-23 15:29	41mins	0	407	0.00%	0.69%	53756	59062	Complete Outage of 400kV/220kV Mylasandra SS, 220kV/66kV HSR SS, 220kV/66kV koramangala SS, 220kV/66kV Nagnathpura SS, 220kV/66kV Nimhans SS, 220kV/66kV ligani SS and 220kV/66kV Verandahally SS of KPTCL: During antecedent conditions, 400kV Kolar Mylasandra was under Shut down. 220kV HSR EPIP and 220kV Koramangala Nimhans were under outage. As per the reports submitted, the triggering incident was 8-M Fault in 400kV Somanangalal Mylasandra line and the line tripped. Subsequently, 220kV Somanahalli Mylasandra line-18.2 tripped on over current protection and this led to complete outage of 400kV/220kV Mylasandra SS, which inturn led to complete outage of 220kV/66kV Koramangala SS, 220kV/66kV Nagnathpura SS, 220kV/66kV Normangala SS, 220kV/66kV Nagnathpura SS, 220kV/66kV Nimhans SS, 220kV/66kV Nimhans SS, 220kV/66kV Nerandahally SS.	1. 400kV Somanahally Mylasandra 2. 220kV Somanahally Mylasandra Line-18.2	
6	GI-1	Andhra Pradesh	04-Feb-23 19:29	04-Feb-23 22:01	2 hrs 32 mins	90	0	0.23%	0.00%	39249	42835	Tripping of 220kV Bus-1 of 220kV Srisaliam RB PH of APGENCO: As per the reports submitted, the triggering incident was non opening of Generator Unit-1 Circuit breaker R-phase limb while deparalleling Generator which was connected to 220kV Bus-1 at 220kV Srisaliam RB PH leading to LBB operation. Immediately all the elements connected to the bus tripped.	Unit-1 at Srisailam RB 2. 220kV Srisailam Domalpenta 3. 220kV Srisailam Dindi	
7	GI-1	Andhra Pradesh	08-Feb-23 09:31	08-Feb-23 11:44	2hrs 13mins	0	0	0.00%	0.00%	48931	53823	Tripping of 220kV Bus-2 of 220kV Srisailam RB PH of APGENCO: As per the reports submitted while shifting 220kV Srisailam Markapuram Line from Bus-2 to Bus-1 at Srisailam end, an arc was observed in B-phase. Immediately, Bus-2 BBP operated and all the elements connected to the bus tripped.	220kV Srisailam Nagarjuna Sagar 220kV Srisailam Domalpenta 3. 220kV Srisailam Jalapally-1 4. 220kV Srisailam Markapuram 5. 220kV Srisailam Balakala Guduru	
8	GI-2	Andhra Pradesh	09-Feb-23 23:00	09-Feb-23 23:45	45mins	0	0	0.00%	0.00%	36494	42802	Tripping of 400kV Bus-1 of 400kV/220kV Nunna SS of PGCIL SR-1: As per the reports submitted, the triggering incident was line side B-phase CT failure in 400kV Vijayawada Nellore-AP line-3 at Vijayawada end causing B-N fault. Immediately, Bus-1 BBP operated and all the main CBs connected to the bus tripped. At the same time, 400kV Vijayawada Lanco line-1 and 400kV Vijayawada VTPS IV line-1 tripped on distance protection.	1.400kV Vijayawada Nellore-AP line-3 2. 400kV Vijayawada Lanco line-1 3. 400kV Vijayawada VTPS IV line-1	
9	GI-1	Andhra Pradesh	18-Feb-23 15:17	18-Feb-23 17:01	1 hrs 44 mins	150	0	0.30%	0.00%	49511	57090	Tripping of 220kV Bus-2 of 400kV/220kV VTPS of APGENCO: As per the reports submitted, the triggeirng incident was 220kV bus side B-phase isolator failure in 220kV VTPS Piduguralla line (which was under LC) while installing isolators at VTPS end. Immediately, 220kV Bus-2 BBP operated and all the elements connected to the bus tripped.	1. 220kV VTPS Tadikonda 2. 220kV VTPS Rentachinthala 3. 220kV VTPS Chillakallu-2 4. 220kV VTPS Kindapalli-2 5. 220kV VTPS Nuziveedu 6. 400kV/220kV VTPS ICT-1	
10	GI-1	Tamil Nadu	26-Feb-23 07:33	26-Feb-23 10:20	2hr 47mins	0	64	0.00%	0.13%	43586	50718	Tripping of 110kV Bus-1 400kV/230kV/110kV SV Chatram SS of TANTRANSCO: As per the reports submitted, the triggering incident was Y-N fault in 110kV Bus-1 at 400kV/230kV/110kV SV Chatram SS and immediately BBP operated causing all the elements connected to the bus to trip.	1. 400kV/10kV SV Chatram ICT-4	

Details of Grid Events during the Month of February 2023 in Southern Region % Loss of generation / loss of load w.r.t Antecedent Generation/Load in the Regional Grid during the Grid Event dent Generation/Load in the Regional Grid Loss of generation / loss of load during the Grid Event Time and Date of occurrence of Grid Event Time and Date of Name of Elements (Tripped/Manually opened) Brief details of the event (pre fault and post fault system conditions) Restoration % Load Loss (MW) % Generation Loss(MW) (GI 1or 2/ GD-1 to GD-5) Generation Loss(MW) Load Loss (MW) Antecedent Generation (MW) Antecedent Load (MW) . 400kV/230kV Karamadai ICT-1&3 . 230kV Karamadai Karuvalur Tripping of 230kV Bus-1 of 400kV/230kV/110kV Karamadai SS of TANTRANSCO: As per the reports submitted, the triggering incident was 230kV Bus-1 BBP operation due to suspected B-N fault in 230kV Bus-1. Immediately all the elements connected to the 230kV Bus-1 tripped. . 230kV Karamadai Ingur 26-Feb-23 17:09 26-Feb-23 21:49 44406 48982 11 GI-1 Tamil Nadu 4hrs 40mins 0 0 0.00% 0.00% 1. 230kV Karamadai Kundha PH-3 5. 230kV Karamadai Pushep 6. 230kV/110kV Auto transformer-1 at Karamadai

Details of Grid Events during the Month of February 2023 in Eastern Region



SI No		Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event		Duration (HH:MM)	Loss of ger loss of load Grid I	during the	of load w.r. Generation Regional Gr	neration / loss t Antecedent /Load in the id during the Event	Antecedent Generathe Regions		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	Hazipur, Amnour, Barauni, Mokama	22.02.2023 18:11	22.02.2023 18:25	00:14	270	255	0.89%	1.19%	30232	21351	At 17:57 Hrs, B_ph CT of 220/132 kV ATR-3 burst at Hazipur S/s. At the same time, 220 kV Muzaffarpur-Hazipur D/c and 220 kV Barauni-Hazipur-2 tripped. Subsequently, both units (UH8 & UH9- 250 MW each) at Barauni along with Mokama, Hajipur and Amnour load got islanded and survived for 13 minutes. At 18:10 Hrs, due to sudden load throw-off at Amnour, both units tripped on Over-speed protection and total power supply failed at Barauni, Hazipur, Amnour and Mokama S/s. 270 MW generation loss and 255 MW load loss occurred.	220 kV Muzaffarpur-Hazipur D/c 220 kV Barauni-Hazipur-D/c 220 kV Barauni-Mokama D/c U#8, U#9 at Barauni (250 MW each)

Details of Grid Events during the Month of February 2023 in North Eastern Region



CI V	Category of Grid Event		Time and Date of	Time and Date of	Duration		ation / loss of load ne Grid Event		ation / loss of load w.r.t eneration/Load in the	Reg	neration/Load in the gional Grid				
SI No.	(GI 1or 2/ GD-1 to GD-5)	Affected Area	occurrence of Grid Event	Restoration	(HH:MM:SS)	Generation Loss(MW)	Load Loss (MW)	% Generation Loss(MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)	Brief details of the event (pre fault and post fault system conditions)	Elements Tripped		
1	GD 1	Khandong, Umrangsho and Haflong areas of Assam Power System	08-Feb-23 22:41	08-Feb-23 23:11	0:30:00	0	11	0.00%	0.60%	2053	1839	khandong, Umrangsho and Halfong areas of Assam Power System were connected with the rest of NER Grid through 132 kV Khandong - Khliehriat 1 line. 132 kV Jiriban-Halfong, 132 kV Kheihriat-Khandong 2 and 132 kV Kopili-Khandong D/C lines were under shutdown. At 22:41 Hrs on 08.02.23, 132 kV Khandong - Khliehriat 1 line tripped. Due to tripping of this element, Khandong, Umrangsho and Halfong areas of Assam Power System were separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Khandong, Umrangsho and Halfong areas of Assam Power System by charging 132 kV Khandong - Khliehriat 1 line at 17:44 Hrs on 09.02.23.	132 kV Khandong - Khliehriat 1 line		
2	GD 1	Rangia, Tangia, Sipajhar and Kamalpur areas of Assam Power System	09-Feb-23 18:36	09-Feb-23 18:41	0:05:00	0	100	0.00%	3.62%	2995	2760	Rangia, Tangia, Sipajhar and Kamalpur areas of Assam Power System were connected with the rest of NER Grid through 132kV New Rangia - Rangia - 1.8. 2 lines. 132 kV Kamalpur-Sishugram line and 132kV Kamalpur-AIIMS line kept open to avoid overloading of Rangia ICTs, 132 kV Rowta - Tangia line and 132 kV Sipajhar - Rowta line kept open to avoid overloading of 132 kV Sonabil-Depota line. At 18:36 Hrs. on 09.02.23, 132kV New Rangia - Rangia - 1.8. 2 lines tripped. Due to tripping of these elements, Rangia, Tangia, Sipajhar and Kamalpur areas of Assam Power System were separated from rest of NER Grid and subsequently collapsed due to no source available in these areas. Power supply was extended to Tangia S/S by charging 132 kV Rowta - Tangia line at 18:41 Hrs on 09.02.23, to Sipajhar by charging 132 kV Rowta - Sipajhar line at 18:51 Hrs on 09.02.23, to Kamalpur line at 18:52 Hrs on 09.02.23 and to Rangia 132 kV Bus by charging 132 kV New Rangia - Rangia 1 line at 19:02 Hrs on 09.02.2033.	132kV New Rangia - Rangia -1 & 2 lines		
3	GD 1	Panchgram area of Assam Power System	18-Feb-23 10:23	18-Feb-23 11:22	0:59:00	0	17	0.00%	0.85%	2269	2001	Panchgram area of Assam Power System was connected with the rest of NER Grid through 132 kV Panchgram - Lumshnong, 132 kV Hallakandi - Panchgram and 132 kV Badarpur - Panchgram lines At 10-23 Hrs on 18.02.23, 132 kV Panchgram - Lumshnong, 132 kV Hallakandi - Panchgram inles Badarpur - Panchgram lines tripped. Due to tripping of these elements, Panchgram area of Assam Power System was separated from rest of NER Grid and subsequently collapsed due to no source available in this area. Power supply was extended to Panchgram area of Assam Power System by charging 132 kV Hallakandi - Panchgram line at 11:22 Hrs on 18.02.23.	132 kV Panchgram - Lumshnong, 132 kV Hallakandi - Panchgram and 132 kV Badarpur - Panchgram lines		
4	GD 1	Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System	19-Feb-23 19:55	19-Feb-23 20:55	1:00:00	0	22	0.00%	0.91%	2621	2414	Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were connected with the rest of NER Grid through 132 KV Daporijo-Along Line. At 19:55 Hrs on 19.02.2023,132 kV Daporijo-Along Line tripped. Due to tripping of this element, Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System were separated from the rest of NER Grid and subsequently collapsed due to no source available in these areas. Power was extended to Along, Pasighat, Roing, Tezu and Namsai areas of Arunachal Pradesh Power System by charging 132 kV Daporijo-Along Line at 07:43 Hrs on 15.02.2023.	132 KV Daporijo-Along Line		
5	GI-I	Tripura	07-Feb-23 06:47	07-Feb-23 08:30	1:43:00	26	0	1.12%	0.00%	2328	2132	AGTCCPP Unit 3 tripped at 06:47 Hrs of 07-02-23 due to Air Filter Differential pressure high. Revision done from Block No. 35 on 07-02-23.	AGTCCPP Unit 4		
6	GI-II	Tripura	08-Feb-23 18:41	08-Feb-23 20:30	1:49	335	0	10%	0%	3245	2827	Palatana GT II 8.5T II (Module II) tripped at 18:41 Hrs on 08:02-23 due to 95% Stator Earth Fault. Revision done from Block No.83 on 08:02-23.	Palatana GT II & ST II (Module II)		
7	GI-II	Tripura	10-Feb-23 18:48	10-Feb-23 20:30	1:42	330	0	10%	0%	3260	2792	Palatana GT II & ST II (Module II) tripped at 18:48 Hrs on 08:02-23 due to Generator Protection Operation. Revision done from Block No.83 on 10:02-23.	Palatana GT II & ST II (Module II)		
8	GI-I	Tripura	14-Feb-23 03:55	14-Feb-23 05:30	1:35:00	10	0	0.48%	0.00%	2076	1428	AGTCCPP Unit 6 tripped at 03:55 Hrs of 14-02-23 due to high steam pressure. Revision done from Block No. 23 on 14-02-23.	AGTCCPP Unit 6		