

Details of Grid Events during the Month of January 2024 in Northern 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
						Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
1	GI-2	Rajasthan	02-Jan-24 07:28	02-Jan-24 10:00	02:32	690	160	1.611	0.325	42839	49201	<p>i) 400/220kV Akal(RS) has one and half breaker scheme at 400kV level and double main transfer bus scheme at 220kV level.</p> <p>ii) As reported, at 07:28hrs, 220 KV Akal(RS)-Bhu(RS) Ckt-1 tripped on B-N phase to earth fault due to heavy fog.</p> <p>iii) At the same time, 400/220 KV 500 MVA ICT-1, 2 & 4 and 315MVA ICT-3 at Akal(RS) also tripped. (Exact reason yet to be shared, but it is suspected that there is delay in CB opening due to which ICTs also got tripped. Also O/C protection settings of ICTs need to be shared.)</p> <p>iv) As per DR of 400/220 KV 500 MVA ICT-2 at Akal(RS), O/C/EJ protection operated and fault current was I_b=5.157KA.</p> <p>v) As per DR of 400/220 KV 315 MVA ICT-3 at Akal(RS), O/C/EJ protection operated and fault current was I_b=2.288KA.</p> <p>vi) As per SCADA SOE, 220kV Akal(RS)-Barmer(RS) Ckt also tripped during the same time. (Exact reason yet to be shared)</p> <p>vii) As per PMU at Jodhpur(RS), two consecutive B-N phase to earth faults are observed with delayed fault clearance time of 320ms and 1400ms respectively.</p> <p>viii) As per SCADA, change in demand of approx. 160MW is observed in Rajasthan control area.</p> <p>ix) As per SCADA, change in Rajasthan wind generation of approx. 690MW is observed.</p>	<p>1) 400/220 KV 500 MVA ICT 1 at Akal(RS)</p> <p>2) 400/220 KV 500 MVA ICT 2 at Akal(RS)</p> <p>3) 400/220 KV 315 MVA ICT 3 at Akal(RS)</p> <p>4) 400/220 KV 500 MVA ICT 4 at Akal(RS)</p>
2	GD-1	Rajasthan	05-Jan-24 05:16	05-Jan-24 06:43	01:27	1817	410	5.726	0.965	31732	42496	<p>i) During the antecedent condition, 220kV Kota(PG)-KTPS(RVUN) (RS) Ckt-1 & 2, 220kV KTPS-Heerapura Ckt, 220kV KTPS-Beawar Ckt, 220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt and 220 KV Anta(NT)-Sakapura(RS) (RS) Ckt were out of service and 110MW Unit-1, 210MW Unit-4 & 5 and 195MW Unit-6 & 7 at 220kV KTPS (generating total ~803MW), 200MW Unit-2 at RAPS-A (generating ~200MW), 220MW Unit-3 at RAPS-B (generating ~185MW), 220MW Unit-5 & 6 at RAPS-C (generating total ~452MW), 43MW Unit-1, 3 & 4 at RPS HEP (generating total ~91MW), 33MW Unit-1, 2 & 3 at HEP (generating total ~91MW) were in service.</p> <p>ii) Before the event, at 05:15 hrs, 220kV KTPS-Bundi Ckt, 220kV RAPS-A-RAPS-B Ckt and 220kV RAPS-C-Anta220 Ckt were already carrying 288MW, 214MW, 273MW and 289MW respectively and limited connectivity with the grid was available (220kV Vatka, Bundi and Anta).</p> <p>iii) At 05:15:56 hrs, 220kV Bundi-Gulabpura (RS) Ckt was manually opened on SLOC instruction to avoid line tripping on overloading.</p> <p>iv) After this, as per DR, 220kV KTPS-Vatika Ckt current reached ~550A (~120MW) and tripped on over-current protection operation from KTPS end. At the same time, as per DR, 220kV RAPS-C(NP)-Anta(NT) Ckt current reached ~1800A (~600MW) and tripped due to over-loading.</p> <p>v) Due to tripping of above lines, KTPS/RAPS-A/RAPS-B got isolated from the grid with only radial load available at 220kV Debari, 220 KV Ranpur and 220kV Chittorgarh. This led to over frequency, frequency reached to 51.6Hz.</p> <p>vi) Subsequent to this, RAPS-B unit-4 tripped on over frequency and came to house load. RAPS-B unit-4 operated on house load for approx. 1.5 hours but couldn't able to come back to grid mode due to issue in governing system (as intimated by RAPS)</p> <p>vii) RAPS-A unit-2 (no provision to come to house load) and KTPS Units also tripped on over frequency protection.</p> <p>viii) RAPS-C unit-5&6 tripped due to loss of auxiliary supply (auxiliary supply changeover from 220kV to 400kV blocked due to frequency mismatch).</p> <p>ix) As per PMU, no fault is observed in the system.</p> <p>x) As per SCADA, loss of approx. 410 MW is observed in Rajasthan control area and total change in generation of approx. 1817MW is observed.</p>	<p>1) 220kV KTPS-Beawar ckt</p> <p>2) 220 KV Anta(NT)-Sakapura(RS) (RS) Ckt</p> <p>3) 220 KV Debari(RS)-RAPS_A(NP) (RS) Ckt</p> <p>4) 220kV KTPS-Vatika ckt</p> <p>5) 220kV RAPS_C(NP)-Anta(NT) Ckt</p> <p>6) 200 MW RAPS-C Unit-5</p> <p>7) 220 MW RAPS-B Unit-2</p> <p>8) 200 MW RAPS-C Unit-5</p> <p>9) 220 MW RAPS-C Unit-6</p> <p>10) 110 MW Kota TPS Unit-1</p> <p>11) 210 MW Kota TPS Unit-4</p> <p>12) 210 MW Kota TPS Unit-5</p> <p>13) 195 MW Kota TPS Unit-6</p> <p>14) 195 MW Kota TPS Unit-7</p>
3	GI-1	Rajasthan	05-Jan-24 12:19	05-Jan-24 14:07	01:48	385	0	0.786	0.000	48977	62168	<p>i) Total MW generation of CSP Bhadla and SBEP, is evacuated through five 220/33kV 125MVA ICTs at Saurya Urja(IP)-Bhadla(PG) Ckt-1 & 2. During antecedent condition, loss of total MW generation of Saurya Urja(IP)-CSP Bhadla-SBEP was ~500MW and ICTs were carrying ~100MW each.</p> <p>ii) As reported, at 12:19hrs, 220/33 kV 125 MVA ICT-1 at Saurya Urja Solar(SU) tripped due to earth fault in LV side of ICT. (Exact location and nature of fault yet to be shared).</p> <p>iii) As per PMU at Saurya Urja(IP), Y-B phase to phase fault with fault clearance time of 80ms is observed in the system.</p> <p>iv) As per PMU, no generation loss occurred at Saurya Urja(IP). But reduction in solar generation of approx. 385MW in total is observed (150MW at AHEJL, 100MW at RSEPL and 35MW at RSLPL).</p>	<p>1) 220/33 kV 125 MVA ICT 1 at Saurya Urja Solar(SU)</p>
4	GI-2	Delhi	09-Jan-24 11:03	09-Jan-24 12:36	01:33	0	360	0.000	0.589	45066	61169	<p>i) 400/220kV Dwarka(PG/DTL) has one and half breaker scheme at 400kV level (owned by PG upto ICTs) and double main bus scheme at 220kV level (owned by DTL).</p> <p>ii) As reported, at 11:03 hrs, during the maintenance work of 220kV bus sectionalizer 1 at Dwarka(DTL), bus-bar protection operated at 220kV Dwarka(DTL).</p> <p>iii) Due to bus bar protection operation, 400/220 KV 500 MVA ICT-1 & 2 at Dwarka (PG) tripped from 220kV side only, 400kV side remained connected. 220kV Dwarka-Pappankani(DTL) Ckt-1 & 2 and 220kV Dwarka-Narana (DTL) Ckt-1 & 2 also tripped. Both the buses at 220kV level became dead.</p> <p>iv) As per PMU, no fault is observed in the system.</p> <p>v) As per SCADA, change in demand of approx. 360MW is observed in Delhi control area.</p> <p>vi) As reported, after tripping power was restored from Ridge valley and Barnoli within 10 minutes.</p>	<p>1) 400/220 KV 500 MVA ICT 1 at Dwarka (PG)</p> <p>2) 400/220 KV 500 MVA ICT 2 at Dwarka (PG)</p> <p>3) 220kV Dwarka-Pappankani(DTL) Ckt-1</p> <p>4) 220kV Dwarka-Pappankani(DTL) Ckt-2</p> <p>5) 220kV Dwarka-Narana (DTL) Ckt-1</p> <p>6) 220kV Dwarka-Narana (DTL) Ckt-2</p>
5	GI-2	Haryana	09-Jan-24 14:01	09-Jan-24 14:32	00:31	0	0	0.000	0.000	47825	58747	<p>i) During antecedent condition, 800kV HVDC Champa-Kurukshetra Bipole was carrying total 2500MW (625MW each pole).</p> <p>ii) As reported at 14:02:09hrs, "commutation failure detected" and "Pole-4 Instability Detected by SSAD" protection latched in Pole 4 which initiated CAT A2 sequence for blocking of Pole 4 and isolated Pole 4 from parallel Pole 2.</p> <p>iii) Further after ~800ms of initiation of CAT A2 sequence by Pole 4 - Instability protection, opening sequence to HVHS at both ends didn't initiate which led to failure of protective isolation of faulty Pole 4 and generated CAT B alarm leading to tripping of parallel Pole 2 also.</p> <p>iv) Further at 14:01:17 hrs, "instability detected" protection latched in Pole 1 also which initiated CAT A2 sequence for protective isolation from Pole 3.</p> <p>v) Further at 14:01:18hrs, like Pole 4, CAT A2 sequence in Pole 1 also failed to initiate HVHS opening leading to protective sequence failure which generated CAT B alarm that resulted in tripping of parallel Pole 3.</p> <p>vi) Due to tripping of all four (04) poles, power order reduced from 2500MW to 0MW.</p> <p>vii) As per PMU, fluctuation in power order was observed.</p>	<p>1) 800 KV HVDC Kurukshetra(PG) Pole-01</p> <p>2) 800 KV HVDC Kurukshetra(PG) Pole-02</p> <p>3) 800 KV HVDC Kurukshetra(PG) Pole-03</p> <p>4) 800 KV HVDC Kurukshetra(PG) Pole-04</p>
6	GI-2	Rajasthan	10-Jan-24 12:19	10-01-2024 13:51	01:32	1360	0	2.542	0.000	53506	64858	<p>i) As reported, at 12:19hrs, 400kV Bhadla(RS)-Bikaner(RS) Ckt-2 tripped on Y-B phase to phase fault with fault distance of 50.19km and fault current of 9.176KA and 8.29KA in Y and B phase respectively from Bhadla(RS). As per information received from SLOC Rajasthan, fault was traced by Patrolling from team of M/s Ramelex Pvt. Ltd. and the broken conductor was repaired after taking shutdown of 400kV Bhadla(RS)-Bikaner(RS) Ckt-1 & 2. (Exact location of conductor snapping need to be shared)</p> <p>ii) As per DR at Bikaner(RS) end of 400kV Bhadla(RS)-Bikaner(RS) Ckt-2, fault was sensed in zone-1; fault current was 4.799KA and 5.723KA in Y and B phase respectively from Bikaner(RS) end and fault clearing time was ~55ms.</p> <p>iii) As per SCADA, change in NR total solar generation of approx. 1360MW is observed out of which approx. 900MW is recovered within 2 minutes.</p> <p>iv) As per PMU at Bhadla(PG), Y-B phase to phase fault is observed with fault clearance time of 120 ms.</p> <p>v) As per SCADA SOE, 220/33kV 100MVA ICT-1 & 3 at RSKPL(IP) also tripped during the same time. (Exact reason yet to be shared)</p>	<p>1) 400kV Bhadla(RS)-Bikaner(RS) Ckt-2</p> <p>2) 220/33kV 100MVA ICT-1 at RSKPL(IP)</p> <p>3) 220/33kV 100MVA ICT-3 at RSKPL(IP)</p>
7	GD-1	Himachal Pradesh	10-Jan-24 20:29	10-Jan-24 23:31	03:02	0	0	0.000	0.000	40641	58974	<p>i) 400kV Koldam(NT) has one and half breaker scheme.</p> <p>ii) As reported, at 20:29 hrs, during hand tripping of 400kV Ludhiana(PG)-Koldam(NT) (PG) Ckt-1 from Koldam(NT) end, one pole of tie CB 1432 failed to open which resulted in bus bar protection operation.</p> <p>iii) Fault was severe and got extended to both the buses and all the elements connected to Bus-1 & 2 tripped and 400kV Koldam(NT) S/S became dead.</p> <p>iv) As per PMU, R-Y phase to phase fault with fault clearing time of 80ms is observed in the system.</p> <p>v) As per SCADA, no change in demand is observed in HP control area.</p>	<p>1) 400kV Ludhiana(PG)-Koldam(NT) (PG) Ckt-1</p> <p>2) 400 KV Nallagarh(PG)-Koldam(NT) (PG) Ckt</p> <p>3) 400 KV Koldam(NT)-Parbat Pooling Baranala(PG) (PKTCL) Ckt</p> <p>4) 400kV Bus 1 at Koldam(NT)</p> <p>5) 400kV Bus 2 at Koldam(NT)</p>
8	GI-2	Uttar Pradesh	11-Jan-24 19:12	11-Jan-24 19:49	00:37	0	150	0.000	0.238	43682	63083	<p>i) As reported, at 19:12hrs, B-phase isolator jumper broke at 400/220kV Muzaaffarnagar(UP) and bus-bar protection operated at 220kV Bus-1 at Muzaaffarnagar(UP).</p> <p>ii) Due to bus-bar protection operation, all the elements connected to 220kV Bus-1 at Muzaaffarnagar(UP) tripped and Bus-1 became dead.</p> <p>iii) As reported, 220kV Muzaaffarnagar-Bhadli Ckt and 220kV Muzaaffarnagar-Badli Ckt also tripped during the same time (exact reason yet to be shared).</p> <p>iv) As per PMU at Muzaaffarnagar(UP), B-N phase to earth fault with fault clearance time of 80ms is observed.</p> <p>v) As per SCADA, change in demand of approx. 150 MW is observed in UP control area.</p>	<p>1) 400/220 KV 315 MVA ICT-3 at Muzaaffarnagar(UP)</p> <p>2) 400/220 KV 500 MVA ICT-4 at Muzaaffarnagar(UP)</p> <p>3) 220/132kV 160MVA ICT-4 at Muzaaffarnagar(UP)</p> <p>4) 220 KV Muzaaffarnagar(UP)-Badli Ckt</p> <p>5) 220 KV Muzaaffarnagar(UP)-Badli Ckt</p> <p>6) 220 KV Muzaaffarnagar(UP)-Khatua Ckt</p>
9	GI-2	Rajasthan	15-Jan-24 13:59	19-Jan-24 21:45		2020	0	4.027	0.000	50162	61237	<p>i) As reported, at 13:59hrs on 15th January, 2024, 400kV Bhadla(RS)-Bikaner(RS) Ckt-1 tripped on R-B phase to phase fault with fault distance of 17.88km and fault current of 13.35KA and 12.73KA in R and B phase respectively from Bikaner(RS) and fault distance of 147.5km and fault current of 2.951KA and 3.572KA in R and B phase respectively from Bhadla(RS); fault was observed in zone-1 at both the ends.</p> <p>ii) As per information received from SLOC Rajasthan, line patrolling was done by representatives of M/s Ramelex Pvt. Ltd. and it was observed that conductor was broken between tower location no. 456-457.</p> <p>iii) As per SCADA, change in NR total solar generation of approx. 2020MW is observed at 13:59hrs.</p> <p>iv) As per PMU at Bhadla(PG), R-B phase to phase fault is observed with fault clearance time of 80 ms at 13:59hrs.</p>	<p>1) 400 KV Bikaner-Bhadla (RS) Ckt-1</p>
10	GI-2	Rajasthan	15-Jan-24 14:06	19-Jan-24 21:50		1760	0	3.539	0.000	49728	60568	<p>i) As reported, at 14:06hrs, 400kV Bhadla(RS)-Bikaner(RS) Ckt-2 tripped on R-Y phase to phase fault with fault distance of 147.1km and fault current of 3.865KA and 4.392KA in R and Y phase respectively from Bikaner(RS) and fault distance of 34.9km and fault current of 11.07KA and 10.64KA in R and Y phase respectively from Bhadla(RS); fault was observed in zone-1 at both the ends.</p> <p>ii) As per information received from SLOC Rajasthan, line patrolling was done by representatives of M/s Ramelex Pvt. Ltd. and it was observed that conductor was broken between tower location no. 120-121.</p> <p>iii) As per DR at Bikaner(RS) end of 400kV Bhadla(RS)-Bikaner(RS) Ckt-2, fault was sensed in zone-1; fault current was 4.55KA and 5.14KA in R and Y phase respectively from Bikaner(RS) end and fault clearing time was ~55ms.</p> <p>iv) At the same time, 220/33kV 100MVA ICT-3 at Rising Sun(RSDCL4) tripped due to relay mal-operation (exact reason yet to be shared).</p> <p>v) As per SCADA, change in NR total solar generation of approx. 1760MW is observed at 14:06hrs.</p> <p>vi) As per PMU at Bhadla(PG), R-Y phase to phase fault is observed with fault clearance time of 80 ms at 14:06hrs.</p>	<p>1) 400 KV Bikaner-Bhadla (RS) Ckt-2</p> <p>2) 220/33kV 100MVA ICT-3 at Rising Sun(RSDCL4)</p>

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
11	GI-1	Punjab	23-Jan-24 11:38	23-Jan-24 13:45		0	440	0.000	0.683	48653	64418	i) As reported, at 11:38hrs, LBB protection of Bus Coupler-1 CB operated at 220kV Jamalpur(BBMB). On inspection at switch yard, kite thread was found near 220kV Bus Coupler-1 (A-7) and Bus Coupler-2 (A-17). ii) Due to LBB protection operation, all the elements connected to 220kV Bus-1 at Jamalpur(BBMB) tripped and 220kV Bus-1 at Jamalpur(BBMB) became dead (Bus-wise arrangement of elements yet to be shared). iii) As per SCADA SOE, main CBs of all the elements connected to 400kV Bus-1 at Amritsar(PG) opened at the same time and 400kV Bus-1 at Amritsar(PG) became dead. However, lines remained connected through the CBs. Hence it is suspected that bus bar protection operated at 400kV Bus-1 at Amritsar(PG) (Exact reason of the same yet to be shared). iv) As per PMU at Bhabra(BB), no fault is observed in the system. v) As per SCADA, load loss of approx. 440 MW is observed in Punjab control area.	1) 220kV Bus 1 at Jamalpur(BB) 2) 220 KV Jalandhar-Jamalpur (BB) Ckt-1 3) 220 KV Bhakra_R-Jamalpur (BB) Ckt-1 4) 220 KV Gangawal-Jamalpur (BB) Ckt-1 5) 220 KV Gangawal-Jamalpur (BB) Ckt-2 6) 220 KV Jamalpur(BB)-Dandhari-Kaibar(PG) (PSTCL) Ckt-2 7) 220/66kV 100 MVA ICT-1 at Jamalpur(BBMB) 8) 220/66kV 160 MVA ICT-3 at Jamalpur(BBMB) 9) 220/132kV 100 MVA ICT-1 at Jamalpur(BBMB)
12	GD-1	Rajasthan	24-Jan-24 10:44	24-Jan-24 12:17		260	0	0.564	0.000	46099	61089	i) During antecedent condition, total generation of 220kV AHEJL was evacuating through 220 KV Fatehgarh_II(PG)-AHEJL PSS HB_FGRAH_PG (AHEJL) (AHEJL) Ckt which was carrying approx. 260 MW. ii) As reported, at 10:44 hrs, 220 KV Fatehgarh_II(PG)-AHEJL PSS HB_FGRAH_PG (AHEJL) (AHEJL) Ckt tripped on Y-N phase to earth fault, fault occurred due to snapping of jumper. iii) As per PMU plots of voltage at Fatehgarh2 end of Fatehgarh-Fatehgarh II ckt-1, Y-N phase to earth fault is observed which cleared within 100msec. Voltage dropped to ~0.96pu during the fault. iv) Due to tripping of 220 KV Fatehgarh_II(PG)-AHEJL PSS HB_FGRAH_PG (AHEJL) (AHEJL) Ckt, RE generation of AHEJL affected. As per SCADA, total reduction in NR RE generation of approx. 260MW is observed. v) As per PMU at 220kV AHEJL, MW generation loss of approx. 260MW is observed at AHEJL.	1) 220 KV Fatehgarh_II(PG)-AHEJL PSS HB_FGRAH_PG (AHEJL) (AHEJL) Ckt-1
13	GI-2	Rajasthan	24-Jan-24 12:16	27-Jan-24 19:49		1225	0	2.300	0.000	53261	64337	i) As reported, at 12:16hrs, 400kV Bhadla(BS)-Bikaner(RS) Ckt-1 tripped on Y-B phase to phase fault with fault distance of 70.45 km and fault current of 6.947 kA and 6.167 kA in A and B phase respectively from Bhadla(BS) end and fault distance of 103.6 km and fault current of 4.568 kA and 5.264 kA in Y and B phase respectively from Bikaner(RS) end. ii) As per information received from SLOC Rajasthan, line patrolling was done by representatives of M/s Ramelex Pvt. Ltd. and it was observed that conductor was broken between tower location no. 242-243. iii) As per SCADA, change in NR total solar generation of approx. 1225MW is observed out of which approx. 1090MW is recovered within 3 minutes. iv) As per PMU at Bhadla(PG), Y-B phase to phase fault is observed with fault clearance time of 120 ms.	1) 400kV Bhadla(BS)-Bikaner(RS) Ckt-1
14	GI-2	Rajasthan	28-Jan-24 16:32	28-Jan-24 18:44		0	160	0.000	0.311	39146	51415	i) As reported, at 16:32hrs, 220kV side of 400/220 kv 315 MVA ICT 1 at Ajmer(RS) tripped on operation of B6.2 relay due to inter trip cable fault. ii) As per scheme "SPS for Transformers at 400kV Ajmer (R/PN) substation", if any of the two 400/220kV 315 MVA ICT trips on fault/protection then tripping command will be extended from 86(Master trip) of that ICT to following feeders: 220kV Ajmer-Bewar (RS) Ckt, 220kV Ajmer-Kishangarh (RS) Ckt, 220kV Ajmer-Bherunda (RS) Ckt-1 & 2. Hence, the above said lines tripped on SPS operation due to tripping of ICT-1. iii) Further as reported, as remedial action taken, the faulty cable was already removed. iv) As per PMU at Bhadla(PG), no fault is observed in the system. v) As per SCADA, load loss of approx. 160MW is observed in Rajasthan control area.	1) 400/220 kv 315 MVA ICT 1 at Ajmer(RS) 2) 220kV Ajmer-Bewar (RS) Ckt 3) 220kV Ajmer-Kishangarh (RS) Ckt 4) 220kV Ajmer-Bherunda (RS) Ckt-1 5) 220kV Ajmer-Bherunda (RS) Ckt-2
15	GI-2	Rajasthan	28-Jan-24 14:58	28-Jan-24 16:24		0	540	0.000	1.014	41369	53271	i) As reported, at 14:58hrs, 220kV Isolator (4898) B-phase jumper of 220kV Bus Coupler-1 broke and the fault reflected on the 220kV bus bar at Ratangarh(RS). ii) Due to this fault, 400/220 kv 315 MVA ICT 1 at Ratangarh(RS), 220 KV Ratangarh(RS)-Sikar(PG) (PG) Ckt-1, 220 KV Ratangarh(RS)-Sri Durgangarh (RS) Ckt, 220kV Ratangarh-Ratangarh220 (RS) Ckt-1 & 2 tripped (Bus-wise arrangement of elements yet to be shared). iii) As per SCADA SOE, 220kV Ratangarh220(Jurh/Jurh) (RS) Ckt also tripped during the same time. (Exact reason yet to be shared) iv) As per PMU at Sikar(PG), Y-N phase to earth fault is observed with delayed fault clearance time of 280 ms (Phase sequence issue is observed). v) As per SCADA, load loss of approx. 540MW is observed in Rajasthan control area. vi) Further as reported, broken 220kV isolator (4898) B-phase jumper of 220kV Bus Coupler-1 was already replaced.	1) 400/220 kv 315 MVA ICT 1 at Ratangarh(RS) 2) 220 KV Ratangarh(RS)-Sikar (PG) Ckt-1 3) 220 KV Ratangarh(RS) Sri Durgangarh (RS) Ckt 4) 220kV Ratangarh-Ratangarh220 (RS) Ckt-1 5) 220kV Ratangarh-Ratangarh220 (RS) Ckt-2
16	GD-1	Rajasthan	30-Jan-24 07:13	30-Jan-24 07:49		77	0	0.167	0.000	46099	61089	i) Generation of 220kV AHEJL PSS IV RE stations evacuates through 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJL PSS 4 HB_FGRAH_FBTL (AHEJL) (AREPRL) Ckt. During antecedent condition, AHEJL PSS IV RE station was generating approx. 77MW. ii) As reported, at 07:13hrs, 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJL PSS 4 HB_FGRAH_FBTL (AHEJL) (AREPRL) Ckt tripped on B-N phase to earth fault, fault sensed by distance protection in zone-1 (30km, ~45%). As per DR, successful A/R operation is observed at AFSPS end and no A/R operated at AHEJL end. iii) As per PMU at Fatehgarh2(PG) end, R-N phase to earth fault is observed. As per DR at AFSPS end, B-N fault is observed. Phase sequence mapping issue either at Fatehgarh2 end or at AFSPS end is suspected. iv) As per PMU data, due to tripping of 220kV AHEJL PSS IV line, RE (wind) generation (77MW) of the RE station lost due to loss of evacuation path. v) As per PMU plots of voltage at Fatehgarh2 end of Fatehgarh-Fatehgarh II ckt-1, phase to earth fault cleared within 100msec is observed. Voltage dropped to ~0.97pu during the fault.	1) 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJL PSS 4 HB_FGRAH_FBTL (AHEJL) (AREPRL) Ckt-1
17	GI-2	Rajasthan	30-Jan-24 08:15	30-Jan-24 08:50		0	700	0.000	1.192	46655	58711	i) 400/220kV Chittorgarh(RS) has double main single breaker bus scheme at 220kV side and one and half bus scheme at 400kV side. There are three (03) 315MVA ICTs at Chittorgarh and five 220kV feeders: Sawa-1 & II, Prataggarh, Nimbahera, Chittorgarh and Debari. 220/132kV Debari is having two (02) source: one is from 400/220kV Chittorgarh and another from 220kV Amberi. ii) During antecedent condition, 315MVA ICT-1, 220kV feeders to Debari, Prataggarh were connected to 220kV Bus-1 and 315MVA ICT-2&3, 220kV feeders to Sawa-I&II, Nimbahera were connected to 220kV Bus-2. 400/220kV 315MVA ICT-1, 2 & 3 were carrying approx. 232MW, 228MW & 244MW respectively. iii) As reported, at 08:15:22hrs, 220kV Chittorgarh-Sawa ckt-2 tripped on B-N phase to earth fault. Fault occurred due to snapping of B-ph jumper at tower location no. 74 at distance approx. 26km from Chittorgarh end. iv) As per PMU, B-N phase to earth fault with delayed clearance of 280msec is observed. As per DR of 220kV Chittorgarh-Sawa ckt-2 of Chittorgarh end, B-N fault in 2-3 picked up by distance protection. Further after ~200msec, 2-1 picked up and tripping initiated to B-ph pole. However, simultaneous A/R blocked and all three phase tripped. (Reason of A/R block and 3-ph tripping yet to be shared by Rajasthan) v) At the same time, 400/220kV 315MVA ICT-2 at Chittorgarh and bus coupler at 220kV side also tripped. As informed, ICT-2 tripped with LBB re-trip flag and bus coupler tripped on over current protection. (Exact reason of tripping of ICT-2 and bus coupler along with its DR not received). vi) With the tripping of bus coupler CB, 220kV Bus-1&2 got split. 315MVA along with 220kV feeders to Prataggarh & Debari at 220kV Bus-1 and 315MVA ICT-3 along with 220kV feeders to Nimbahera, Sawa-1 at 220kV Bus-2. vii) Load of ICT-2 also shifted on ICT-3. ICT-3 also got overloaded due to shifting of complete load of Prataggarh on ICT-1. As per DR of ICT-1, its loading increased to ~325MVA. viii) At 08:15:33:10hrs (As per DR), 315MVA ICT-3 also tripped on over current protection operation. Loading recorded in DR just before the tripping was ~400MVA. ix) After tripping of ICT-3, load of Nimbahera not started drawing power from Prataggarh which led to further overloading of 315MVA ICT-1 and 220kV Chittorgarh-Prataggarh feeder. As per DR of ICT-1, loading of ICT-1 increased from 325MVA to 495MVA within span of 250msec. x) At 08:15:33:750hrs, 220kV Chittorgarh-Prataggarh ckt tripped on over current protection from Prataggarh end. With the tripping of Prataggarh feeder, loading of ICT-1 relieved. xi) As per SCADA, total change in demand of approx. 700MW observed at 08:15hrs.	1) 220kV Chittorgarh-Sawa ckt-2 2) 400/220 kv 315 MVA ICT 2 at Chittorgarh(RS) 3) 400/220 kv 315 MVA ICT 3 at Chittorgarh(RS) 4) 220kV Chittorgarh-Prataggarh ckt
18	GD-1	Rajasthan	30-Jan-24 09:00	30-Jan-24 09:54		0	450	0.000	0.764	45401	58932	i) 400/220kV Chittorgarh(RS) has double main single breaker bus scheme at 220kV side and one and half bus scheme at 400kV side. There are three (03) 315MVA ICTs at Chittorgarh S& and five (05) 220kV feeders: Sawa-1 & II, Prataggarh, Nimbahera, Chittorgarh and Debari. 220/132kV Debari is having two (02) source: one is from 400/220kV Chittorgarh and another from 220kV Amberi. ii) As reported, at 08:50hrs, 220kV Chittorgarh-Prataggarh ckt was charged and loading of ICT-1 at Chittorgarh again started increasing. ICT-1 was feeding load of Prataggarh, Nimbahera via Prataggarh and Debari. iii) At 08:58:47:00hrs, over current protection in B-ph of ICT-1 started. And at 09:00hrs, 220kV Amberi-Debari ckt also tripped. iv) With the tripping of 220kV Amberi-Debari ckt, total load of Debari shifted to Chittorgarh ICT-1. v) At 09:00:21:660, 315MVA ICT-1 at Chittorgarh also tripped on overcurrent protection operation. As per DR, loading recorded was ~365MVA. vi) As per SCADA, change in demand of approx. 450MW observed at 09:00hrs.	1) 220kV Amberi-Debari ckt 2) 400/220 kv 315 MVA ICT 1 at Chittorgarh(RS)

Details of Grid Events during the Month of January 2024 in Northern Region



Sl No.	Category of Grid Event (GI for GI 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)		
19	GD-1	Delhi	31-Jan-24 03:17	31-Jan-24 04:54		261	350	0.873	0.950	29888	36823	<p>i) During antecedent condition, 400KV interconnectors 41952 and 42352 between 400KV Buses at Bawana(DTL) and 400KV Buses at Bawana CCGTB(DTL) were in closed position. 400/220KV 315MVA ICT-1, 4, 5 & 6 were connected to Bawana CCGTB(DTL) and 315 MVA ICT-2 & 3 were connected to Bawana(DTL). 216 MW Bawana GPS - UNIT 4 (GT-4) and 253 MW Bawana GPS - UNIT 6 (STG-2) were generating approx. 165MW and 96MW respectively.</p> <p>ii) As reported, at 03:17 Hrs, 400 KV Bawana-Mundka (DV) Ckt-1 & 2 tripped from Mundka end only on R-N phase to ground fault with fault distance of 22.42 km and 24.09 km respectively from Bawana end.</p> <p>iii) At the same time, 400 KV Bawana CCGTB(DTL)-Bahadurgarh(PG) (PG) Ckt and 400 KV Abdullahpur(PG)-Bawana(DV) (PG) Ckt tripped from both the ends on distance protection operation.</p> <p>iv) Rest of the 400KV ckt's connected at Bawana CCGTB(DTL) and Bawana(DTL) tripped from the remote end only. (Exact reason, nature and location of fault yet to be shared).</p> <p>v) As communicated telephonically by Delhi, current through interconnectors was towards Bawana CCGTB(DTL), hence it is suspected that fault was on Bawana CCGTB(DTL) bus side and bus bar protection did not operate, hence lines tripped from remote ends in zone-2. (Reason of non-operation of bus bar protection yet to be shared)</p> <p>vi) Due to tripping of all 400KV ckt's, both the 400KV buses became dead at Bawana(DTL) and Bawana CCGTB(DTL) and blackout occurred at 400/220/66KV Bawana(DTL) & 400KV CCGTB Bawana (DTL) S/A.</p> <p>vii) As reported by SLDC Delhi, the load of 220KV Shalimar Bagh, SGTN, DSIDC Bawana and Rohini-I & II, Bawana and Khanjawa S/s got affected.</p> <p>viii) As per SCADA, no change in demand is observed in Delhi control area, but as reported by SLDC Delhi, load loss of approx. 350MW is observed out of which approx. 250MW was normalized within 30 minutes and remaining load was changeover to alternate sources.</p> <p>ix) As per PMU, R-N phase to ground fault with delayed fault clearing time of 560ms is observed.</p> <p>x) Further as reported, 216 MW Bawana GPS - UNIT 4 (GT-4) and 253 MW Bawana GPS - UNIT 6 (STG-2) tripped during the same time and generation loss of approx. 261MW is observed.</p>	<p>1) 400 KV Bawana-Mundka (DV) Ckt-1</p> <p>2) 400 KV Bawana-Mundka (DV) Ckt-2</p> <p>3) 400 KV Maharanibagh (PG)-Bawana(DV) (DTL) Ckt-1</p> <p>4) 400 KV Maharanibagh (PG)-Bawana(DV) (DTL) Ckt-2</p> <p>5) 400 KV Abdullahpur (PG)-Bawana(DV) (PG) Ckt</p> <p>6) 400 KV Deepapur (HKT)-Bawana(DV) (PG) Ckt</p> <p>7) 400 KV Bawana CCGTB(DTL)-Bhawana (PG) Ckt</p> <p>8) 400 KV Bawana CCGTB(DTL)-Bahadurgarh (PG) Ckt</p> <p>9) 216 MW Bawana GPS - UNIT 4 (GT-4)</p> <p>10) 253 MW Bawana GPS - UNIT 6 (STG-2)</p>
20	GD-1	Delhi	31-Jan-24 21:22	31-Jan-24 22:37		0	160	0.000	0.323	34570	49549	<p>i) During antecedent condition, 220 KV Ballabgarh(BB)-BTPS(DTL) (BB) Ckt-1 & 2 and 220 KV Tughlakabad(PG)-BTPS(DTL) Ckt-1 & 2 were catering the part load of 220KV Okhla and 220KV Sarita Vihar through 220 KV BTPS(DTL)-Okhla Ckt-1 & 2 and 220 KV BTPS(DTL)-Sarita Vihar Ckt-1 & 2. 220 KV BTPS(DTL)-Awar Ckt and 220 KV BTPS(DTL)-Noida Sec. 38 Ckt were on no-load. 220KV bus coupler at BTPS was in closed condition.</p> <p>ii) As reported, at 21:22 Hrs, 220 KV Ballabgarh(BB)-BTPS(DTL) (BB) Ckt-1 tripped on Y-N phase to ground fault with fault distance of 17.01 km and fault current of 4.2 kA from Ballabgarh end; zone-1 distance protection operated at Ballabgarh end and zone-4 distance protection operated at BTPS end. On inspection, 220KV Bus-2 PT isolator Y-ph LA jumper was found broken at BTPS S/A.</p> <p>iii) At the same time, all other 220KV ckt's connected at BTPS(DTL) tripped on zone-4 distance protection operation at BTPS end (reason of non-operation of bus bar protection yet to be shared).</p> <p>iv) Due to tripping of all 220KV ckt's, both the 220KV buses became dead at BTPS(DTL) and blackout occurred at 220KV BTPS(DTL) S/A.</p> <p>v) As reported by SLDC Delhi, the load of Okhla, Batra, Mahiyv Nagar, Shivalki, Sirfort, DC Saket, Select City mall, Sarita Vihar, Meethapur, Jamia, Sarai Julena, Jassola got affected.</p> <p>vi) As per SCADA, change in demand of approx. 220MW is observed in Delhi control area out of which approx. 90MW is restored within 10 minutes. But as reported by SLDC Delhi, load loss of approx. 160MW is observed.</p> <p>vii) As per PMU, Y-N phase to ground fault with delayed fault clearing time of 160ms is observed.</p> <p>viii) Further as reported, at 21:29 hrs, load of Okhla was normalized through 220KV Tughlakabad-Okhla Ckt-1 & 2. At 21:45 hrs, load of 220KV Sarita Vihar was attempted to normalize through 220KV Maharanibagh-Sarita Vihar ckt at Sarita Vihar, but line could not hold and a blast occurred in 220KV Bus coupler CB at Sarita Vihar; R-ph pole was found damaged. Later at 23:20 hrs, load of 220KV Sarita Vihar was normalized through 220KV Maharanibagh-Sarita Vihar ckt.</p>	<p>1) 220 KV Ballabgarh(BB)-BTPS(DTL) (BB) Ckt-1</p> <p>2) 220 KV Ballabgarh(BB)-BTPS(DTL) (BB) Ckt-2</p> <p>3) 220 KV Tughlakabad(PG)-BTPS(DTL) Ckt-1</p> <p>4) 220 KV Tughlakabad(PG)-BTPS(DTL) Ckt-2</p> <p>5) 220 KV BTPS(DTL)-Okhla Ckt-1</p> <p>6) 220 KV BTPS(DTL)-Okhla Ckt-2</p> <p>7) 220 KV BTPS(DTL)-Sarita Vihar Ckt-1</p> <p>8) 220 KV BTPS(DTL)-Sarita Vihar Ckt-2</p> <p>9) 220 KV BTPS(DTL)-Awar Ckt</p> <p>10) 220 KV BTPS(DTL)-Noida Sec. 38 Ckt</p>
21	GD-1	Uttarakhand	31-Jan-24 18:13	31-Jan-24 19:19		0	173	0.000	0.306	44228	56581	<p>i) As reported, at 18:13 Hrs, 220 KV Pithoragarh-Jauljivi (PG) Ckt-1 tripped on R-N phase to ground fault with fault distance of 8.2 km and fault current of 1.5kA from Pithoragarh end.</p> <p>ii) Further as reported, at the same time, 220 KV Pithoragarh-Jauljivi (PG) Ckt-2 also tripped on Y-N phase to ground fault with fault distance of 9.7 km and fault current of 2.27kA from Pithoragarh end.</p> <p>iii) Due to tripping of 220 KV Pithoragarh-Jauljivi (PG) Ckt-1 & 2, supply to 220/132 KV 100 MVA ICT 1 & 2 at Pithoragarh(PG) and all 132KV ckt's were lost, resulting in tripping of all the elements connected at both 220KV and 132KV level at Pithoragarh(PG) which led to 220/132KV Pithoragarh(PG) S/A blackout.</p> <p>iv) As per PMU, 3-phase to ground fault with fault clearing time of 80ms is observed.</p> <p>v) As per SCADA, load loss of approx. 173MW is observed in Uttarakhand control area.</p> <p>vi) As reported by CPCC, the load of Pithoragarh (~40MW), Almora (~53MW), Bhawani (~40MW), Ranikhet (~20MW) and Bageshwar (~10MW) S/s got affected.</p>	<p>1) 220 KV Pithoragarh-Jauljivi (PG) Ckt-1</p> <p>2) 220 KV Pithoragarh-Jauljivi (PG) Ckt-2</p> <p>3) 220/132 KV 100 MVA ICT 1 at Pithoragarh(PG)</p> <p>4) 220/132 KV 100 MVA ICT 2 at Pithoragarh(PG)</p> <p>5) 132 KV Pithoragarh(PG)-Pithoragarh(PTCUL) (PTCUL) Ckt</p> <p>6) 132 KV Lohaghat(PTCUL)-Pithoragarh(PG) (PTCUL) Ckt</p> <p>7) 132 KV Pithoragarh(PTCUL)-Almorav(PTCUL) (PTCUL) Ckt</p> <p>8) 20 MVAR Bus Reactor No 1 at 220 KV Pithoragarh(PG)</p>

Details of Grid Events during the Month of January 2024 in Western Region



Sl No.	Category of Grid Event (GI for GI-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	23:25 / 03-01-2024	01:26 / 04-01-2024	02:01	-	180	-	0.33%	64045	54071	At 23:25 Hrs/ 03.01.2024, Y-phase conductor of 220 kV Ponda-Bus-2 snapped. At 220 kV Ponda substation, Bus coupler was in open condition for load management. The 220kV Bus-II was fed by 220kV Mapusa-Ponda I and 220kV Amona-Ponda I line. As the busbar protection failed to operate at Ponda S/S, two lines connected to 220 kV Ponda-Bus-2 tripped from Mapusa & Amona remote ends. 220 kV Mapusa-Ponda tripped from Mapusa end only on Zone 2 DRR operation. 220 kV Amona-Ponda tripped from Amona end only on Earth fault relay operation. Due to 220kV Bus-II failure at Ponda S/S, the other elements connected to the Bus i.e. 220/110kV, 100MVA ICT-2, 220/110kV, 100MVA ICT-3, 220/33kV, 50MVA ICT and 220kV Ponda-Xeldem (PXR) line tripped. 180 MW load loss occurred due to the event.	Tripping of following elements- 1. 220 kV Amona-Ponda 2. 220 kV Mapusa-Ponda 3. 220/110 kV Ponda-ICT 2&3 (100 MVA) 4. 220/33 kV Ponda-ICT-1 (50 MVA) 5. 220 kV Ponda-PXR
2	GD-1	WR	18:29 / 04-01-2024	20:53 / 06-01-2024	50:24	57	-	0.08%	-	75329	64691	At 18:29 Hrs/ 04.01.2024, 220 kV Bhuj-Gadhisa ckt tripped on Bph-E fault alongwith both ICTs. As informed by Gadhisa, 57 MW generation loss occurred during the event due to loss of evacuation path.	Tripping of following elements- 1. 220 kV Bhuj-Gadhisa ckt 2. 220/33 kV Gadhisa-ICT-1&2
3	GD-1	WR	22:36 / 06-01-2024	23:39 / 06-01-2024	01:03	310	-	0.46%	-	66756	52747	At 22:36 Hrs/ 04.01.2024, due to fire in R-Ph wave trap of 220kV Bhuj-Baranda line at Bhuj end, 220kV Bhuj-Gadhisa line tripped on TEF protection operation at Gadhisa end only and 220 kV Bhuj-Baranda line tripped at Bhuj end only. Generation loss of about 310 MW at Gadhisa (Renew Power) and Baranda (ASPL) wind power plant occurred due to the event.	Tripping of following elements- 1. 220 kV Bhuj-Gadhisa ckt 2. 220 kV Bhuj-Baranda ckt
4	GD-1	WR	06:58 / 09-01-2024	19:17 / 09-01-2024	12:19	240	0	0.32%	-	73939	596917	At 06:58 Hrs./09.01.2024, 220 kV Bhuj-Gadhisa ckt tripped on Bph-E fault. As informed by Gadhisa, 240 MW generation loss occurred during the event due to loss of evacuation path.	Tripping of following elements- 1. 220 kV Bhuj-Gadhisa line
5	GD-1	WR	14:42 / 10-01-2024	01:44 / 11-01-2024	11:02	85.6	0	0.11%	-	76101	65309	At 14:42 Hrs/ 10.01.2024, 220 kV Bhuj-Vadva line tripped due to Y-B fault. Generation loss of 85.6 MW occurred due to loss of evacuation path	Tripping of following elements- 1. 220 kV Bhuj-Vadva line
6	GD-1	WR	13:01 / 10-01-2024	16:34 / 10-01-2024	03:33	42.36	0	0.05%	-	78501	66133	At 13:01 Hrs/10.01.2024, 220 kV Raipur-Sherisha line tripped due to 33 kV Sherisha solar line insulator failure. Generation loss of 42.36 MW occurred due to loss of evacuation path.	Tripping of following elements- 1. 220 kV Raipur-Sherisha line
7	GD-1	WR	06:52 / 10-01-2024	08:04 / 10-01-2024	01:12	280	-	0.39%	-	72488	58803	At 06:52 Hrs./10-01-2024, 220 kV/33 kV Ostro ICT-1 tripped due to Rph LA jumper opened at 33 kV end due to high wind and 220 kV/33 kV Ostro ICT-2 also tripped due to overload at same time. As per SCADA Generation loss of 280 MW observed.	Tripping of following elements- 1. 220/33 kV ICT-1&2 at Ostro
8	GD-1	WR	17:11 / 11-01-2024	00:20 / 12-01-2024	07:09	25	0	0.03%	-	74283	65055	At 17:11 hrs/11.01.2024, 220 kV Bhuj-Vadva ckt tripped on Y-B fault. As per SCADA, around 25 MW generation loss occurred due to loss of evacuation path.	Tripping of following elements- 1. 220 kV Bhuj-Vadva line
9	GD-1	WR	08:13 / 12-01-2024	09:25 / 12-01-2024	01:12	-	145	-	0.22%	76995	66977	At 08:13 Hrs/12.01.2024, fire occurred in 220kV B-phase CT on 220kV Bhilad-DFCC-1 line at DFCC Dahell End & the line tripped on Zone-2 Y-B Fault and 220kV Bhilad SS become dead due to tripping all connected 220 kV Lines from remote end or Zone-4 operation. 220kV Bhilad-Vapi (PG)-1, 2 & 3 Tripped on Zone-4 Y&B Phase from Bhilad end (as informed by Bhilad SS) and Zone-2 B-N fault from Vapi(PG) end (as informed by RTAMC Vadodra) 220 kV Bhilad-Tarapur line tripped from Tarapur end on back up Over current relay @ 220 kV Bhilad-Atul tripped from opposite end zone-2 protection.	Tripping of following elements- 1. 220kV Bhilad-Vapi(PG)-1 2. 220kV Bhilad-Vapi(PG)-2 3. 220kV Bhilad-Vapi(PG)-3 4. 220kV Bhilad-Vapi 5. 220kV Bhilad-Tarapur 6. 220kV Bhilad-Atul 7. 220kV Bhilad-DFCC-1 & 2 8. 100MVA, 220/66kV ICT-1, 2 & 3 9. 160MVA, 220/66kV ICT-4
10	GD-1	WR	13:24 / 12-01-2024	09:30 / 13-01-2024	20:06	0	-	-	-	73975	67402	At 13:24 Hrs/12.01.2024, 220kV Baranda Bhuj ckt tripped on B-E fault, Bhuj end: 52.8 km, 3.97 kA, 220kV Baranda SS become dead due to tripping of single connected 220 kV ckt to Baranda end.	Tripping of following elements- 1. 220kV Baranda Bhuj ckt
11	GD-1	WR	12:49 / 12-01-2024	13:19 / 12-01-2024	00:30	0	-	-	-	76706	69182	At 12:49 Hrs/ 12.01.2024, 220 kV/33 kV Ostro ICT-1&2 tripped due to LA failure and conductor snapping in 33 kV feeder. No generation loss due to the event.	Tripping of following elements- 1. 220/33 kV ICT-1&2 at Ostro
12	GD-1	WR	19:19 / 13-01-2024	18:55 / 14-01-2024	23:36	0	-	-	-	73870	62979	At 19:19 Hrs/13.01.2024, 220kV Vadva Bhuj ckt tripped on Yph-B fault, Bhuj end: 57.2 km, Iy=4.25 kA, Ib= 4.21 kA. 220kV Vadva SS become dead due to tripping of single connected 220 kV ckt from Bhuj end.	Tripping of following elements- 1. 220 kV Bhuj-Vadva line
13	GD-1	WR	11:30 / 14-01-2024	19:56 / 14-01-2024	08:26	22.51	-	0.03%	-	72277	65637	At 11:30 Hrs/14.01.2024, 220kV Baranda Bhuj ckt tripped on Bph-E fault, Baranda end: 19.7 km, 0.80kA. 220kV Baranda SS become dead due to tripping of single connected 220 kV ckt from Bhuj end to Baranda	Tripping of following elements- 1. 220kV Baranda Bhuj ckt
14	GI-1	WR	16:54 / 15-01-2024	17:15 / 15-01-2024	00:21	-	115	-	0.18%	71639	63592	At 16:54 Hrs./15.01.2024, 220 kV Nasik-Navsari(GI)-1 tripped on Zone-2, R-E fault. As informed by SLOC Maharashtra, kite thread found in location number 02 during line patrolling. Although the fault was cleared, LBB operated and all elements at 220 kV Navsari(GI) except 220 kV Navsari(GI)-Navsari(PG)-1&2 tripped. Load loss of 115 MW occurred due to the event.	Tripping of following elements- 1. 220 kV Nasik-Navsari(GI) 2. 220 kV Sachin-Navsari(GI) 3. 220 kV Pimpri-Navsari(GI) 4. 220 kV Chikali-Navsari(GI) 5. 220 kV Atul-Navsari(GI) 6. 220/66 kV Navsari-ICT-1,2,3,4,5,6&7
15	GD-1	WR	23:14 / 15-01-2024	00:16 / 16-01-2024	01:02	-	-	-	-	61547	53934	At 23:14 Hrs./15.01.2024, 220 kV Indore-Pritamnagar tripped on R-E fault. No Generation was present at Pritamnagar (AWEMP1PL) Wind Power Plant.	Tripping of following elements- 1. 220 kV Indore(PG)-Pritamnagar(AWEMP1PL)
16	GI-2	WR	18:04 / 22-01-2024	18:24 / 22-01-2024	00:20	215	-	0.30%	-	72276	60758	At 18:04 Hrs/22.01.2024, 400 kV RGPPPL Bus 1 and all the connected main bays tripped on Bus bar protection operation. As seen from the above PMU plot, there was no physical fault in the system and the tripping seems to be a small operation. Main and Tie bays of Unit 3A was under open condition due to unit outage and resulted in tripping of 400 kV RGPPPL-Nagthane 2. Tie bay of Unit 2A was in open condition (Unit 2A synchronized at 15:32 Hrs during main bay but tie bay was not closed by RGPPPL) and resulted in tripping of RGPPPL Unit 2A during BB protection operation. As informed by RGPPPL, 215 MW generation loss occurred due to the event.	Tripping of following elements- 1. 400 kV RGPPPL Bus 1 2. 400 kV RGPPPL-Nagthane 2 3. RGPPPL Unit 2A (332 MW)
17	GD-1	WR	18:22 / 23-01-2024	16:56 / 24-01-2024	22:34	36.37	-	0.05%	-	68650	65698	At 18:22 Hrs/23.01.2024, 220 kV Bhuj-Baranda tripped on B-E fault. Due to loss of evacuation path, 36.37 MW generation loss occurred at 220 kV Baranda (ASPL) WPP	Tripping of following elements- 1. 220 kV Bhuj-Baranda line 2. 220/33 kV ICT-1&2
18	GD-1	WR	13:23 / 25-01-2024	15:35 / 26-01-2024	26:12	0	-	0.00%	-	75627	66835	At 13:23 Hrs/25.01.2024, 220 kV Bhuj-Baranda tripped on B-E fault. Due to loss of evacuation path, 220 kV Baranda (ASPL) WPP went dark. As informed by ASPL, no generation at 220 kV Baranda during the event, hence no generation loss	Tripping of following elements- 1. 220 kV Bhuj-Baranda line 2. 220/33 kV ICT-1&2
19	GD-1	WR	19:28 / 25-01-2024	15:16 / 26-01-2024	19:48	20	-	0.03%	-	73407	63093	At 19:28 Hrs/25.01.2024, 220 kV Bhuj-Naranpar tripped on B-E fault. Due to loss of evacuation path, 220 kV Naranpar WPP went dark. As informed by Naranpar, 20 MW generation loss occurred during the event.	Tripping of following elements- 1. 220 kV Bhuj-Naranpar 2. 220/33 kV ICT-1&2
20	GD-1	WR	04:48 / 26-01-2024	06:26 / 26-01-2024	01:38	137	-	0.21%	-	64388	53326	At 04:48 Hrs/26.01.2024, 220 kV/33 kV Ostro ICT-2 tripped on overcurrent due to high wind. As 220 kV/33 kV Ostro ICT-1 was already under planned shutdown. Therefore Ostro S/S got complete dead due to loss of evacuation path. Generation loss of 137 MW reported.	Tripping of following elements- 1. 220/33 kV ICT-2 AT Ostro
21	GI-2	WR	12:28 / 27-01-2024	14:25 / 27-01-2024	01:57	-	-	-	-	77493	73407	At 12:28 Hrs/27.01.2024, 400kV Bus-1 at Parli-II (MH) tripped due to LBB operation due to slipping of steel ring from the pulley and falling in the vicinity of Bus-1 isolator during stringing arrangements for line gantry of Parli (PG)-Parli (MH) Ckt-2. It resulted in tripping of 400kV Parli (MH)-New Parli-1, 400kV Parli (MH)-Nanded line, 400kV Parli (MH)-Karjat line, 400kV Parli (MH)-Solapur line and 400/220kV ICT-3. 400 kV Parli (MH) bus-1 revived through 400 kV Parli New - Parli MH line at 14:25 hrs/27-01-2024. No load loss reported.	Tripping of following elements- 1. 400kV Parli (MH)-New Parli-1, 2. 400kV Parli (MH)-Nanded line-1, 3. 400kV Parli (MH)-Karjat line-1, 4. 400kV Parli (MH)-Solapur line-1, 5. 400/220kV ICT-3
22	GD-1	WR	15:11 / 30-01-2024	16:42 / 30-01-2024	01:31	4.6	-	0.01%	-	76707	69308	At 15:11 Hrs./30.01.2024, 220/33 kV Kotda Madh ICTs 1&2 tripped on HV side overcurrent protection operation during R&Y phase fault in 33 kV feeder no.10. Generation loss of 4.6 MW occurred due to the event.	Tripping of following elements- 1. 220/33 kV Kotda Madh ICT-1&2

Details of Grid Events during the Month of January 2024 in Southern Region



Sl No.	Category of Grid Event (GI for GI-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	Karnataka	13-01-2024 16:14	13-01-2024 16:36	00:22	0	430	0.00%	0.81%	46883	53116	Complete outage of 220kV/110kV Ranebennur SS, 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and Tripping of 220kV Bus-1 of 400kV/220kV Guttur SS and 220kV Bus-1 of 220kV/66kV Honnali SS of KPTCL. During the antecedent conditions, 220kV Ranebennur Shiralkoppa was under outage. 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and 220kV Bus-1 of 220kV/66kV Honnali SS were being radially fed through 220kV Bus-1 of 400kV/220kV Guttur SS. The triggering incident is the spurious tripping of bus coupler at 220kV level led to the bus split and subsequent over loading of ICT-1 at Guttur. This led to the SPS operation and tripping of 220kV Guttur-Ranebennur feeder leading to the complete outage of 220kV Ranebennur. However, since 220kV Guttur-Ranebennur was connected to Bus-2 which was connected to ICT-2 did not relieve the ICT-1 loading and tripped on HV side OC operation leading to the Bus-1 outage and the radial stations connected to 220kV Bus-1	1. 220kV Guttur Bus Coupler 2. 400V/220kV Guttur ICT-1 3. 220kV Guttur-Ranebennur 4. 220kV Guttur Bus-1
2	GD-1	Andhra Pradesh	15-01-2024 02:40	15-01-2024 06:48	04:08	330	0	1.09%	0.00%	30331	36422	Complete Outage of 400kV RYTPP Generating station of APGENCO. At RYTPP end, Generating Unit-6 tripped due to loss of DC supply to furnace supervisory safeguard system. Subsequently, 400kV Kalkiri RYTPP line-2B1 tripped at 02:58hrs and 02:40hrs respectively on operation of over voltage protection at RYTPP end. Tripping of both lines resulted in complete outage of 400kV RYTPP Generating station.	1. 400kV Kalkiri RYTPP Line-1&2
3	GD-1	Tamil Nadu	16-01-2024 21:54	17-01-2024 02:45	04:51	0	0	0.00%	0.00%	37007	37798	Complete outage of 230kV Ettayapuram Solar Plant. As per the reports submitted, the triggering incident was R-N fault in 230kV TTGS Ettayapuram Line-1 and the line tripped. Tripping of the only connected line resulted in complete outage of 230kV Ettayapuram Solar Plant.	1. 230kV-TTGS-Ettayapuram-1
4	GD-1	Andhra Pradesh	17-01-2024 08:40	18-01-2024 00:57	16:17	520	0	1.06%	0.00%	49082	52209	Complete Outage of 400kV HNPCL Generating station: As per the reports submitted, B-phase tension insulator connected to 400kV Bus-1 at Hinduja failed and fell on 400kV Bus-2 causing fault in 400kV Bus-1 and Bus-2, immediately 400kV BBP operated and all the elements connected to the bus tripped. However, 400kV Bus-1 failed to clear the fault and remote ends of the lines connected to Bus-2 cleared the fault in zone-2 protection. Tripping of all 400kV lines resulted in complete outage of 400kV HNPCL Generating station. At the same time, 400kV Simhadri Kalpaka Line-2 tripped on operation of Over voltage Stage-2 protection at Simhadri end.	1. 400kV HNPCL Kalpaka Line-1&2 2. 400kV Guddugudem Hinduja Line-1&2 3. HNPCL Unit-1
5	GD-1	Tamil Nadu	18-01-2024 18:08	18-02-2024 18:20	00:12	0	120	0.00%	0.27%	41548	45199	Complete outage of 230kV Tondiarpet and tripping of Bus-1 at Basin Bridge: As per the reports submitted, the triggering incident is the R-phase CT failure of 230kV Tondiarpet Basin Bridge at Basin Bridge end. At Basin Bridge end BBP operated and Bus-1 got isolated. However, at Tondiarpet the fault was sensed in Z2 and the breaker failed to open and LBB was sensed. The LBB trip was not extended to all bays leading to Z3 operation at remote ends leading to complete outage of 230kV Tondiarpet SS	1. 230kV Tondiarpet-Basin Bridge 2. 230kV Bus-1 at Basin Bridge 3. 230kV Tondiarpet-NCTPS-1 4. 230kV Tondiarpet-NCTPS-2 5. 230kV Tondiarpet-Pulanthoppo 6. 230kV Tondiarpet SS
6	GD-1	Karnataka	21-01-2024 09:05	21-01-2024 10:13	01:08	0	326	0.00%	0.60%	49321	54156	Complete outage of 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and Tripping of 220kV Bus-1 of 220kV/66kV Honnali SS of KPTCL. During the antecedent conditions 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and 220kV Bus-1 of 220kV/66kV Honnali SS were being radially fed through 400kV/220kV Guttur SS through 220kV Guttur-Davanagere-1,2 and 3 lines of which line-3 was under forced outage. The triggering incident is the tripping of 220kV Guttur-Davanagere-1&2 leading to the complete outage of 220kV/66kV Davanagere SS, 220kV/66kV Benikere SS and Tripping of 220kV Bus-1 of 220kV/66kV Honnali SS of KPTCL	1. 220kV Guttur-Davanagere-1 2. 220kV Guttur-Davanagere-2
7	GD-1	Karnataka	21-01-2024 13:26	21-01-2024 14:41	01:15	0	340	0.00%	0.65%	40478	52578	Complete outage of 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and Tripping of 220kV Bus-1 of 220kV/66kV Honnali SS of KPTCL. During the antecedent conditions 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and 220kV Bus-1 of 220kV/66kV Honnali SS were being radially fed through 400kV/220kV Guttur SS through 220kV Guttur-Davanagere-1,2 and 3 lines of which line-2 was under forced outage. The triggering incident is the tripping of 220kV Guttur-Davanagere-1&3 leading to the complete outage of 220kV/66kV Davanagere SS, 220kV/66kV Hosadurga SS, 220kV/66kV Benikere SS and Tripping of 220kV Bus-1 of 220kV/66kV Honnali SS of KPTCL	1. 220kV Guttur-Davanagere-1 2. 220kV Guttur-Davanagere-3
8	GD-1	Tamil Nadu	26-01-2024 19:52	27-01-2024 09:50	13:58	0	0	0.00%	0.00%	40707	41337	Complete outage of 765kV Ariyalur and 765kV NCPs of TANTRANSO: 765kV Ariyalur and 765kV NCPs are being radially fed from 765kV Ariyalur-Thiruvalem-2. The triggering incident is the tripping of 765kV Ariyalur-Thiruvalem-2 at Thiruvalem end on over voltage leading to Complete outage of 765kV Ariyalur and 765kV NCPs of TANTRANSO	1. 765kV Ariyalur-Thiruvalem-2
9	GD-1	Karnataka	28-01-2024 10:13	28-01-2024 13:01	02:48	62	102	0.12%	0.18%	53806	55344	Complete Outage of 220kV/110kV Ghataprabha SS of KPTCL: As per the reports submitted, the triggering incident was 220kV BBP maloperation at 220kV/110kV Ghataprabha SS. Immediately, all the lines connected to the buses tripped. This resulted in complete outage of 220kV/110kV Ghataprabha SS.	1. 220kV Ghataprabha Narendra Line-1&2 2. 220kV Ghataprabha Mughalakhod Line-1&2 3. 220kV/110kV Ghataprabha Transformer-1&2
10	GD-1	Tamil Nadu	29-01-2024 19:58	29-01-2024 23:54	03:56	0	0	0.00%	0.00%	43798	45172	Complete outage of 765kV Ariyalur and 765kV NCPs of TANTRANSO: 765kV Ariyalur and 765kV NCPs are being radially fed from 765kV Ariyalur-Thiruvalem-2. The triggering incident is the tripping of 765kV Ariyalur-Thiruvalem-2 at Thiruvalem end on over voltage leading to Complete outage of 765kV Ariyalur and 765kV NCPs of TANTRANSO	1. 765kV Ariyalur-Thiruvalem-2
11	GD-1	Karnataka	28-01-2024 10:13	28-01-2024 13:01	02:48	62	102	0.12%	0.18%	53806	55344	Complete Outage of 220kV/110kV Ghataprabha SS of KPTCL: As per the reports submitted, the triggering incident was 220kV BBP maloperation at 220kV/110kV Ghataprabha SS. Immediately, all the lines connected to the buses tripped. This resulted in complete outage of 220kV/110kV Ghataprabha SS.	1. 220kV Ghataprabha Narendra Line-1&2 2. 220kV Ghataprabha Mughalakhod Line-1&2 3. 220kV/110kV Ghataprabha Transformer-1&2
12	GD-1	Karnataka	31-01-2024 14:40	31-01-2024 15:11	00:31	93	1000	0.18%	1.70%	52510	58782	Complete outage of 220kV Kadar, Arasikere, Bettedevarakere, Shiralkoppa and tripping of Bus-2 at Honnali, KB Cross and 400kV Bus-1 and Bus-2 at Talaguppa of KPTCL. In the antecedent conditions, 220kV Kadar, Arasikere, Bettedevarakere, Shiralkoppa and Bus-2 at Honnali, KB Cross were radially connected to 220kV Shimoga SS. The triggering incident is the R-N fault in 220kV Shimoga-Anthrasanahalli line. After which 400/220kV ICTs at Talaguppa and 220kV Hassan Shimoga loading increased and crossed the pick-up current for 400/220kV Talaguppa ICTs of 450A and tripped in around 80s and subsequently 220kV Shimoga-Hassan tripped at Shimoga end - PSB observed and tripped on Z1. With this tripping an island was formed and under frequency envisaged for Bangalore Islanding scheme operated at Shimoga which led to the complete outage of stations radially connected to Shimoga. However, 220kV Shimoga-Varahi-3 did not trip which led to formation of another smaller island which survived and the island was synchronised to the grid.	1. 220kV Shimoga-Anthrasanahalli 2. 220kV Shimoga-Hassan 3. 400/220kV Talaguppa ICT-1 4. 400/220kV Talaguppa ICT-3
13	GI-2	Tamil Nadu	02-01-2024 04:49	02-01-2024 07:25	02:36	0	0	0.00%	0.00%	31480	38447	Tripping of 230kV Bus-2 of 230kV Neyveli TS-2: As per the reports submitted, the triggering incident was R-N fault in 230kV Neyveli TS-II-Ulundurpet line. At Neyveli end, B-pole of the circuit breaker failed to open causing LBB to operate and all the lines connected to the 230kV Bus-2 of 230kV Neyveli TS-II tripped.	1. 400kV/230kV NLC ICT-1
14	GI-1	Andhra Pradesh	02-01-2024 07:16	02-01-2024 10:29	03:13	0	0	0.00%	0.00%	39148	51328	Tripping of 400kV Bus-1 and 2 of 400kV/220kV Nellore SS of APTRANSCO: As per the reports submitted, the triggering incident was BBP Central Unit maloperation at 400kV/220kV Nellore SS. Immediately, all the main breakers connected to Bus-1 and Bus-2 tripped. Since the lines which are in the same dia with the ICTs were under outage and Te breakers were in open condition, this resulted in tripping of 400kV/220kV Nellore ICT-1&2	1. 400kV/220kV Nellore ICT-1&2
15	GI-1	Tamil Nadu	10-01-2024 15:24	10-01-2024 19:26	04:02	0	0	0.00%	0.00%	43288	51609	Tripping of 230kV Bus at 230kV/110kV Sembatty SS of TANTRANSO: As per the reports submitted, the triggering incident was Y Phase jumper failure between Breaker and 230kV Bus isolator in 230kV Chekanuram Sembatty line causing a bus fault at 230kV Sembatty. Immediately, BBP operated and all the elements connected to the bus tripped. 110kV Was intact during this event.	1. 230kV Mywadi Sembatty 2. 230kV Sembatti Chekanuram 3. 230kV Sembatti Thesi 4. 230kV Sembatty Karaikudi 5. 230kV/110kV Sembatty Auto Transformer-1
16	GI-1	Karnataka	11-01-2024 00:49	11-01-2024 02:19	01:30	0	42	0.00%	0.11%	34308	38600	Tripping of 220kV Bus-1 of 220kV/66kV Chintamani SS of KPTCL: As per the reports submitted, the triggering incident was 220kV Bus-1 LBB maloperation causing all the lines connected to 220kV Bus-1 to trip.	1. 220kV Kolar Chintamani Line-1 2. 220kV Chintamani-Srinivasapura Line-2 3. 220kV/66kV Chintamani Auto Transformer-1
17	GI-1	Tamil Nadu	13-01-2024 09:25	13-01-2024 13:45	04:20	0	0	0.00%	0.00%	52040	54467	Tripping of 230kV Bus at 230kV/110kV Sembatty SS of TANTRANSO: As per the reports submitted, the triggering incident was Y Phase jumper failure between Breaker and 230kV Bus isolator in 230kV Mywadi Sembatty line causing a bus fault at 230kV Sembatty. Immediately, BBP operated and all the elements connected to the bus tripped. 110kV Was intact during this event.	1. 230kV Mywadi Sembatty 2. 230kV Sembatti Chekanuram 3. 230kV Sembatti Thesi 4. 230kV Sembatty Karaikudi 5. 230kV/110kV Sembatty Auto Transformer-1

Details of Grid Events during the Month of January 2024 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 1or GI 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	Biharsharif	14.01.2024 04:22	14.01.2024 05:06	00:44	0	128	0.00%	0.80%	23916	15853	At 04:04 Hrs on 14.01.2024, 220 kv Biharsharif-Mokama-1 tripped due to R_N fault. While attempting to charge the line at 04:22 Hrs, all emanating lines tripped from remote end and total power interrupted at 220/132 kv Biharsharif S/s. Around 128 MW load loss reported at Biharsharif.	220KV-BIHARSARIFF-MOKAMA-1 220KV-BIHARSARIFF-MOKAMA-2 400KV/220KV 315 MVA ICT 1 AT BIHARSARIFF(PG) 400KV/220KV 315 MVA ICT 2 AT BIHARSARIFF(PG) 400KV/220KV 315 MVA ICT 3 AT BIHARSARIFF(PG) 400KV/220KV 500 MVA ICT 4 AT BIHARSARIFF(PG) 220KV-BIHARSARIFF-TTFS-1 220KV-BIHARSARIFF-Khizersarai-1 220KV-BIHARSARIFF-Khizersarai-2 220KV-BIHARSARIFF-Fatuha-1 220KV-BIHARSARIFF-Fatuha-2 220/132KV 160MVA ICT1 at Biharsharif(BH) 220/132KV 160MVA ICT2 at Biharsharif(BH) 220/132KV 160MVA ICT3 at Biharsharif(BH)
2	GD-1	Kahalgaon	30.01.2024 06:48	30.01.2024 09:03	02:15	473	110	1.69%	0.53%	27872	20477	At 06:47 Hrs, while synchronizing 210 MW U#2 at Kahalgaon, 400 kv B_ph CB of its tie bay burst. During this fault, differential protection of 2*400/132 kv 200 MVA ICTs at Kahalgaon operated. But one of the ICTs failed to open and LBB operated leading to tripping of 400 kv Bus#2 (both ICTs are connected to Bus#2). At the same time, 400 kv Bus#4 also tripped as bus sectionalizer didn't open. 500 MW U#6 tripped due to loss of auxiliary supply as its entire auxiliary load was fed through station transformer at 132 kv (ST supply lost due to tripping of 400/132 kv ICTs) due to unavailability of UAT at that time. Later at 07:12 Hrs/07:13 Hrs, 500 MW U#7 and U#5 tripped due to low vacuum pressure. Several auxiliaries were fed through station transformers, supply of which was lost due to tripping of 400/132 kv ICTs. All three units of Kahalgaon S1.2 tripped.	400KV MAIN BUS - 2 AT KHALGAON 400KV MAIN BUS - 4 AT KHALGAON 400KV-DURGAPUR-KHALGAON-1 400KV-DURGAPUR-KHALGAON-2 400KV-KHSTPP-BANKA (PG)-2 400KV-KHSTPP-BANKA (PG)-1 400KV-LAKHISARAI-KHSTPP-2 400KV-KHSTPP-LAKHISARAI-1 400KV-KHSTPP-BARR-1 132KV-KHSTPP-SABOUL-1 132KV-KHSTPP-KHALGAON(BSEB)-1 132KV-KHSTPP-LALMATIA-1 400KV/132KV 200 MVA ICT 1 AT KHSTPP 400KV/132KV 200 MVA ICT 2 AT KHSTPP 132 kv Bus at KHSTPP KHSTPP Unit#6 (500MW)

Details of Grid Events during the Month of January 2024 in North 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 ⁰		Brief details of the event (pre fault and post fault system conditions)	Elements Tripped
	(GI for GI 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	AGTCCPP	01-01-2024 02:27	02-01-2024 04:00	01:33:00	15	0	1.04%	0.00%	1440	1445	AGTCCPP Unit-1 tripped at 02:27 Hrs on 01.01.2024 & AGTCCPP Unit-2.5 tripped at 03:04 Hrs on 01.01.2024 due to High Air Inlet Differential Pressure. Revision done from Block no. 17 on 01.01.2024	AGTCCPP Unit-1,2,5
2	GI 2	Kopili	02-01-2024 16:59	02-01-2024 17:41	00:42:00	115	0	3.77%	0.00%	3053	2376	Kopili Unit-2,3,4 tripped at 16:59 Hrs on 02.01.2024 due to Bus Bar operation at Kopili Bus-I. Revision done at 19:09 Hrs on 02.01.2024	220 kV Misa-Kopili-II, 220/132 kV ICT-1 at Kopili, Kopili Unit-2,3,4 & Bus Coupler at Kopili
3	GI 2	Kopili	02-01-2024 17:50	02-01-2024 18:26	00:36:00	110	0	3.26%	0.00%	3379	2608	Kopili Unit-2,3,4 tripped at 17:50 Hrs on 02.01.2024 due to Bus Bar operation at Kopili Bus-I. Revision done at 19:09 Hrs on 02.01.2024	220 kV Misa-Kopili-II, 220/132 kV ICT-1 at Kopili, Kopili Unit-2,3,4 & Bus Coupler at Kopili
4	GI 2	Kopili	05-01-2024 17:05	05-01-2024 20:21	03:16:00	95	0	3.05%	0.00%	3117	2529	Kopili Unit-2,3 tripped at 17:05 Hrs on 05.01.2024 due to Bus Bar operation at Kopili Bus-I. Revision done at 19:52 Hrs on 05.01.2024	220 kV Misa-Kopili-II, 220/132 kV ICT-1 at Kopili, Kopili Unit-2,3 & Bus Coupler at Kopili
5	GI 2	Kopili	08-01-2024 18:03	08-01-2024 18:37	00:34:00	100	0	3.23%	0.00%	3097	2641	Kopili Unit-2,3 tripped at 18:03 Hrs on 08.01.2024 due to Bus Bar operation at Kopili Bus-I. Revision done from Block no. 83 on 08.01.2024	220 kV Misa-Kopili-II, 220/132 kV ICT-1 at Kopili, Kopili Unit-2,3 & Bus Coupler at Kopili
6	GI 2	AGBPP	14-01-2024 12:41	14-01-2024 14:00	01:19:00	20	0	0.97%	0.00%	2061	1925	AGBPP Unit-6 tripped at 12:41 Hrs on 14.01.2024 due to rotor earth fault. Revision done from Block no. 57 on 14.01.2024	AGBPP Unit-6
7	GI 2	AGBPP	19-01-2024 06:20	19-01-2024 08:00	01:40:00	20	0	1.22%	0.00%	1636	1886	AGBPP Unit-5 tripped at 06:20 Hrs on 19.01.2024 due to restricted earth fault. Revision done from Block no. 33 on 19.01.2024	AGBPP Unit-5
8	GI 2	AGBPP	22-01-2024 10:30	22-01-2024 12:00	01:30:00	3	0	0.16%	0.00%	1826	2037	AGBPP Unit-5 tripped at 10:30 Hrs on 22.01.2024 due to restricted earth fault. Revision done from Block no. 49 on 22.01.2024	AGBPP Unit-5
9	GI 2	AGBPP	27-01-2024 19:26	27-01-2024 21:00	01:34:00	12	0	0.41%	0.00%	2941	2589	AGBPP Unit-8 tripped at 19:26 Hrs on 27.01.2024 due to Low Vacuum pressure. Revision done from Block no. 85 on 27.01.2024	AGBPP Unit-8