

Details of Grid Events during the Month of February 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	Jammu and Kashmir	01-02-2024 01:20	01-02-2024 06:07	04:47	25	0	0.089	0.000	28144	33714	<p>i) As per SCADA SOE, PMU and information received from constituents the sequence of event is as follows: a. At 01:19:18.71hrs, CB of 80MVAR bus reactor at 400V Samaha(PG) opened. b. At 01:20:31.160 hrs, R-N phase to earth fault is observed as per PMU at Amargah(INDGRID) (exact reason and location of fault yet to be shared). c. As per PMU, voltage increased to 1.1 p.u. and over-voltage trip command picked-up. However although voltage reduced to 1.075 p.u. after fault but over-voltage trip command didn't get reset (drop-off to pick-up ratio may be reviewed) and after 5 secs, at 01:20:36.160 hrs, 400 KV Uri_1(NH)-Amargah (INDGRID) Ckt-2 (as per PMU, voltage reached upto "1.1 p.u. at the time of tripping) tripped on over-voltage. At the same time, active power generation of 60MW Unit-4 at Uri_2(NH) reduced from 63MW to 38MW. ii) As per PMU at Amargah(INDGRID), R-N phase to earth fault with fault clearing time of 120ms is observed at 01:20hrs. iii) As per SCADA, generation loss of approx. 25MW occurred at Uri_2(NH) at 01:20hrs.</p>	1) 400 KV Uri_1(NH)-Amargah (INDGRID) (INDGRID) Ckt-2
2	GD-1	Jammu and Kashmir	01-02-2024 01:50	01-02-2024 02:56	01:06	51	600	0.184	1.837	27750	32660	<p>i) As per SCADA SOE, PMU and information received from constituents the sequence of event is as follows: a. At 01:49:13 hrs, 400 KV Uri_2(NH)-Uri_1(NH) (PG) Ckt and 400 KV Uri_2(NH)-Wagora (PG) Ckt also tripped on over-voltage. b. This led to tripping of 60MW Unit-4 at Uri_2(NH) generating "38MW" and absorbing "320MW" due to loss of evacuation path. Complete blackout occurred at 400KV Uri_2(NH). c. At 01:50:04 hrs, 400 KV Uri_1(NH)-Amargah(INDGRID) (INDGRID) Ckt-1 (As per DR at Amargah end, voltage reached upto "1.13 p.u. and as per PMU voltage reached upto "1.17 p.u.) also tripped on over-voltage. d. This led to tripping of 120MW Unit-1 at Uri_1(NH) (generating "134MW" and absorbing "88MW") due to loss of evacuation path. Complete blackout occurred at 400KV Uri_1(NH). e. Due to tripping of 120MW Unit-1 at Uri_1(NH) and 60MW Unit-4 at Uri_2(NH) MVA's support lost and voltage further increased. f. After this all other 400kV lines from Amargah(INDGRID) tripped on over-voltage and supply to 220kV lines also lost which led to complete blackout at 400/220kV Amargah(INDGRID). g. During the same time, 400KV Kishenpur(PG)-Chamera_2(NH) (PG) Ckt and 400 KV Dulhasth(NH)-Kishenpur(PG) (PG) Ckt-1 also tripped on over-voltage. h. At the same time, 220KV Drass(PG)-Alusteng Ckt also tripped on over-voltage. Power was coming from Alusteng through 220KV Drass(PG)-Alusteng Ckt and it was going to Kargil through 220KV Drass(PG)-Kargil Ckt. Due to tripping of 220KV Drass(PG)-Alusteng Ckt, supply to 220KV Drass(PG)-Kargil Ckt lost and complete blackout occurred at 220/66kV Drass(PG). ii) As per SCADA SOE, 220KV Baisala(NH)-Jassore(H) Ckt also tripped at the same time (exact reason yet to be shared). iii) As per SCADA, load loss of approx. 600MW is observed in Jammu and Kashmir control area. iv) As per SCADA, generation loss of approx. 38MW occurred at Uri_2(NH) and approx. 13MW occurred at Uri_1(NH) at 01:50hrs.</p>	1) 400 KV Amargah(INDGRID)-Samba(PG) (INDGRID) Ckt-1 2) 400 KV Amargah(INDGRID)-Samba(PG) (INDGRID) Ckt-2 3) 400 KV Amargah(INDGRID)-Wagora(PG) (INDGRID) Ckt-1 4) 400 KV Amargah(INDGRID)-Wagora(PG) (INDGRID) Ckt-2 5) 220 KV Amargah(INDGRID)-Delina(PG) (INDGRID) Ckt-1 6) 220 KV Amargah(INDGRID)-Delina(PG) (INDGRID) Ckt-2 7) 220 KV Amargah(INDGRID)-Ziankote(K) (POD K) Ckt-1 8) 220 KV Amargah(INDGRID)-Ziankote(K) (POD K) Ckt-2 9) 400 KV Uri_1(NH)-Amargah (INDGRID) (INDGRID) Ckt-1 10) 400 KV Uri_1(NH)-Uri_2(NH) (PG) Ckt 11) 400 KV Uri_2(NH)-Wagora (PG) Ckt 12) 120MW Unit-1 at Uri_1(NH) 13) 60MW Unit-4 at Uri_2(NH) 14) 400KV Kishenpur(PG)-Chamera_2(NH) (PG) Ckt 15) 400 KV Dulhasth(NH)-Kishenpur(PG) (PG) Ckt-1 16) 220KV Baisala(NH)-Jassore(H) Ckt 17) 220KV Drass(PG)-Alusteng Ckt
3	GD-1	Punjab	01-02-2024 08:30	01-02-2024 11:21	02:51	0	30	0.000	0.060	44749	50280	<p>i) As reported, at 08:30hrs, bus-bar protection of 220kV Bus-1 at Jamalpur(BB) operated (exact reason, nature and location of fault yet to be shared). ii) Due to bus bar protection operation, all the elements connected to 220kV Bus-1 at Jamalpur(BB) tripped and 220kV Bus-1 at Jamalpur(BB) became dead (Bus-wise arrangement of elements yet to be shared). iii) As reported, 220kV Bhakra_R-Jamalpur (BB) Ckt-1 tripped on Y-N phase to earth fault with fault current of 2.031 KA and fault distance of 66.32km from Bhakra_R(BB); zone-1 distance protection operated at Bhakra_R(BB) end. iv) As per DR of main-1 relay of 220 KV Jalandhar(end)-Jamalpur (BB) Ckt-1, Y-N phase to earth fault with fault current of 2.511KA and fault clearing time of 53ms is observed. As per DR of min-2 relay of 220 KV Jalandhar(end)-Jamalpur (BB) Ckt-1, B-N phase to earth fault with fault current of 3.358KA and fault clearing time of 70ms is observed; zone-1 distance protection operated at Jalandhar end. (Phase sequence issue is observed in main-2 relay). v) As per PMU at Bhakra_R(BB), Y-N phase to earth fault is observed with fault clearing time of 120ms. vi) As per SCADA, load loss of approx. 30 MW is observed in Punjab control area.</p>	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 Gangwal-Jamalpur (BB) Ckt-1 5) 220/66kV 100 MVA ICT-1 at Jamalpur(BB)M 6) 220/66kV 160 MVA ICT-1 at Jamalpur(BB)M 7) 220/132kV 100 MVA ICT-1 at Jamalpur(BB)M
4	GD-1	Himachal Pradesh	02-02-2024 15:27	02-02-2024 16:30	01:03	0	785	0.000	1.616	44573	48586	<p>i) As reported, at 15:27 hrs, 220kV Baddi(H)P-Pinjore(H) (HPPTCL) Ckt-1 & 2 tripped on R-Y phase to phase fault; zone-1 distance protection operated at Pinjore end. (Exact reason, nature and location of fault yet to be shared). ii) Due to tripping of aforementioned lines, 220 KV Baddi-Kunihar(H) Ckt-1 & 2, 220 KV Baddi-Upper Nangal(H) Ckt, 220 KV Baddi-Madhala(H) Ckt and 220 KV Baddi-Wardhman(H) Ckt tripped due to over-loading and 220/66kV S/S became dead. iii) During the same time, 220 KV Madhala-Upper Nangal(H) Ckt, 220 KV Bhabha-Kunihar(H) Ckt and 220 KV Jeori-Kunihar(H) Ckt also tripped on over-loading. iv) Further, at 15:34 hrs, all 132kV lines from Kunihar(H) tripped on over-loading and 220/132kV Kunihar(H) S/S became dead. v) As per PMU, R-Y phase to phase fault is observed with delayed fault clearing time of 400ms. vi) As per SCADA, total change in demand of approx. 785MW in HP control area is observed.</p>	1) 220kV Baddi(H)P-Pinjore(H) (HPPTCL) Ckt-1 2) 220kV Baddi(H)P-Pinjore(H) (HPPTCL) Ckt-2 3) 220 KV Baddi-Kunihar(H) Ckt-1 4) 220 KV Baddi-Kunihar(H) Ckt-2 5) 220 KV Baddi-Upper Nangal(H) Ckt 6) 220 KV Baddi-Madhala(H) Ckt 7) 220 KV Baddi-Wardhman(H) Ckt 8) 220 KV Madhala -Upper Nangal(H) Ckt 9) 220 KV Bhabha-Kunihar(H) Ckt 10) 220 KV Jeori-Kunihar(H) Ckt
5	GI-2	Uttar Pradesh	05-02-2024 23:58	06-02-2024 00:53	00:55	0	170	0.000	0.447	30345	38002	<p>i) During antecedent condition, 400/220kV 500MVA ICT-2, 220/132kV 160MVA ICT-3 and 4 at Rasra(UP) was carrying approx. 180MW, 30MW and 30MW respectively, 400/220kV 500MVA ICT-1 at Rasra(UP) was not in service. ii) As reported, at 23:58 hrs, bus bar protection operated at both the 220kV buses of 400/220/132kV Rasra(UP) indicating flag "Low gas pressure zone-1". iii) Due to this, all 220kV cts and 400/220kV ICT-2 and 220/132kV ICT-3 & 4 tripped and both the 220kV buses at Rasra(UP) became dead. iv) During inspection, low gas pressure was not found in GIS physically and the flag was reset. It seems that the relay mal-operated due to which this tripping occurred. v) As per PMU at Balla(PG), no fault is observed in the system. vi) As per SCADA, load loss of approx. 170MW is observed in UP control area.</p>	1) 400/220kV 500MVA ICT-2 at Rasra(UP) 2) 220/132kV 160MVA ICT-3 at Rasra(UP) 3) 220/132kV 160MVA ICT-4 at Rasra(UP) 4) 220kV Rasra-Rasra_2200U Ckt 5) 220kV Rasra-Bhadra(UP) Ckt-1 6) 220kV Rasra-Bhadra(UP) Ckt-2 7) 220kV Rasra-Ghauri(UP) Ckt
6	GD-1	Delhi	06-02-2024 10:10	06-02-2024 11:24	01:14	477	587	0.957	0.989	49866	59355	<p>i) During antecedent condition, 400kV interconnectors 41952 and 42932 between 400kV Buses at Bawana(DTL) and 400kV Buses at Bawana CCGT(PGCL) were in off position. ii) 400/220kV 315MVA ICT-1, 4, 5 & 6 were connected to Bawana CCGT(PGCL) and 315 MVA ICT-2 & 3 were connected to Bawana(DTL). 216 MW Bawana GPS- UNIT 2 (GT-3) & 4 (GT-4) and 25.6 MW Bawana GPS- UNIT 5 (STG-1) & 6 (STG-2) were generating approx. 145MW, 154MW, 88MW and 90MW respectively, 216 MW Bawana GPS- UNIT 1 (GT-1) & 3 (GT-3) were in back-charged condition for meeting the station auxiliary supply. iii) As reported, at around 10:10 hrs, heavy sparking and flash over were observed in 400 KV switchyard of CCOT Bawana. On inspection it was found that "Y" phase drop down jumper of bus 41 (400 KV Bawana CCGT(PGCL)-Bahadurgarh(PG) (PG) Ckt) snapped from Jack Bus and fell on the support structure which led to fault in 400 KV Bawana CCGT(PGCL) - Bus 2. iv) Since, the Bus Bar Protection was out of service, both 400 KV Bawana CCGT(PGCL)-Bhawani(PG) (PG) Ckt and 400 KV Bawana CCGT(PGCL)-Bahadurgarh(PG) (PG) Ckt sensed the fault in 24 (reverse zone) and tripped after a time interval of 150ms from Bawana end. Although the fault was on Bus-2, yet both the line sensed the fault since tie CB was in closed position. v) 220/66kV Narela(DTL) has double main bus scheme. vi) During antecedent condition, 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & 2, 220 KV DSIDC-Narela(DV) (DTL) Ckt-1 & 2 and 220/66kV 100MVA ICT-1, 2 & 3 at Narela(DTL) were connected to 220kV Bus-1 at Narela(DTL) and 220 KV Pampat(BB)-Narela(DV) (DTL) Ckt-1, 2 & 3 and 220 KV Rottak Road-Narela(DV) (DTL) Ckt-1 & 2 were connected to 220kV Bus-2 at Narela(DTL). 220kV Bus coupler was in off position. vii) As reported, at 10:29 hrs, bus bar protection operated at 220kV Bus-1 at Narela(DTL) as PG clamp of B-phase conductor of Bus-1 got damaged creating bus fault on B-ph near ICT-2 bus. viii) Due to operation of bus-bar protection, all the elements connected to 220kV Bus-1 at Narela(DTL) tripped and Bus-1 became dead. ix) As reported by SLDC Delhi, the load of 220kV Narela S/S, Bhalawa, Bhalawa 2, Badli, IFC Narela, A-7 Narela, A.L.R. Kham Pur, DSIDC Narela-1 got affected. x) As per PMU, R-B phase to phase fault with fault clearing time of 120ms is observed. xi) As per SCADA, change in demand of approx. 270MW is observed in Delhi control area, but as reported by SLDC Delhi, load loss of approx. 126MW is observed which was normalized within 35 minutes. xii) As reported, at 11:04hrs, load was normalized on 220kV Bus-2 at Narela(DTL).</p>	1) 400 KV Bawana CCGT(PGCL)-Bhawani(PG) (PG) Ckt 2) 400 KV Bawana CCGT(PGCL)-Bahadurgarh(PG) (PG) Ckt 3) 216 MW Bawana GPS- UNIT 2 (GT-3) 4) 216 MW Bawana GPS- UNIT 4 (GT-4) 5) 25.6 MW Bawana GPS- UNIT 5 (STG-1) 6) 25.6 MW Bawana GPS- UNIT 6 (STG-2) 7) 400/220kV 315MVA ICT-4 at Bawana(DV) 8) 400/220kV 115MVA ICT-4 at Bawana(DV) 9) 400/220kV 315MVA ICT-5 at Bawana(DV) 10) 400/220kV 315MVA ICT-6 at Bawana(DV)
7	GI-1	Delhi	06-02-2024 10:29	06-02-2024 11:04	00:35	0	126	0.000	0.213	50745	59286	<p>i) 220/66kV Narela(DTL) has double main bus scheme. ii) During antecedent condition, 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 & 2, 220 KV DSIDC-Narela(DV) (DTL) Ckt-1 & 2 and 220/66kV 100MVA ICT-1, 2 & 3 at Narela(DTL) were connected to 220kV Bus-1 at Narela(DTL) and 220 KV Pampat(BB)-Narela(DV) (DTL) Ckt-1, 2 & 3 and 220 KV Rottak Road-Narela(DV) (DTL) Ckt-1 & 2 were connected to 220kV Bus-2 at Narela(DTL). 220kV Bus coupler was in off position. iii) As reported, at 10:29 hrs, bus bar protection operated at 220kV Bus-1 at Narela(DTL) as PG clamp of B-phase conductor of Bus-1 got damaged creating bus fault on B-ph near ICT-2 bus. iv) Due to operation of bus-bar protection, all the elements connected to 220kV Bus-1 at Narela(DTL) tripped and Bus-1 became dead. v) As reported by SLDC Delhi, the load of 220kV Narela S/S, Bhalawa, Bhalawa 2, Badli, IFC Narela, A-7 Narela, A.L.R. Kham Pur, DSIDC Narela-1 got affected. vi) As per PMU, R-B phase to phase fault with fault clearing time of 120ms is observed. vii) As per SCADA, change in demand of approx. 270MW is observed in Delhi control area, but as reported by SLDC Delhi, load loss of approx. 126MW is observed which was normalized within 35 minutes. viii) As reported, at 11:04hrs, load was normalized on 220kV Bus-2 at Narela(DTL).</p>	1) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-1 2) 220 KV Mandola(PG)-Narela(DV) (DTL) Ckt-2 3) 220 KV DSIDC-Narela(DV) (DTL) Ckt-1 4) 220 KV DSIDC-Narela(DV) (DTL) Ckt-2 5) 220/66kV 100MVA ICT-1 at Narela(DTL) 6) 220/66kV 100MVA ICT-2 at Narela(DTL) 7) 220/66kV 100MVA ICT-3 at Narela(DTL) 8) 220kV Bus-1 at Narela(DTL)
8	GD-1	Himachal Pradesh	08-02-2024 10:41	08-02-2024 10:59	00:18	0	525	0.000	0.901	49687	58261	<p>i) During antecedent condition, as per SCADA, power was flowing towards Kunihar through 220 KV Bhabha-Kunihar(H) Ckt and 220 KV Baddi-Kunihar(H) Ckt-1 & 2 carrying approx. 143MW, 115MW and 115MW. Approx. 31MW was going from Kunihar to Jeori through 220 KV Jeori-Kunihar(H) Ckt and 220/132kV 80/100MVA ICT-1 & 2 at Kunihar(H) were carrying approx. 170MW each. Bus coupler was in off position at 220kV Baddi(H)P. ii) As reported, at 10:41 hrs, 220 KV Bhabha-Kunihar(H) Ckt tripped on B-phase to earth fault. (Exact reason, nature and location of fault yet to be shared). iii) Due to tripping of this line, 220 KV Baddi-Kunihar(H) Ckt-1 & 2 and 220 KV Jeori-Kunihar(H) Ckt tripped due to over-loading and 220/66kV Kunihar(H) S/S became dead. iv) During this time, 220 KV Baddi-Upper Nangal(H) Ckt, 220 KV Baddi-Madhala(H) Ckt and 220 KV Baddi-Wardhman(H) Ckt also tripped due to over-loading and 220kV Bus-1 at Baddi(H)P became dead. v) As per SCADA SOE, 220/66kV 31.5MVA ICT-1 at Jeori(H)P tripped during the same time. (Exact reason yet to be shared). vi) As per PMU, B-N phase to earth fault is observed with fault clearing time of 80ms. vii) As per SCADA, change in demand of approx. 525MW in HP control area is observed.</p>	1) 220 KV Bhabha-Kunihar(H) Ckt 2) 220 KV Jeori-Kunihar(H) Ckt 3) 220 KV Baddi-Kunihar(H) Ckt-1 4) 220 KV Baddi-Kunihar(H) Ckt-2 5) 220/66kV 100MVA ICT-1 at Narela(DTL) 6) 220/66kV 100MVA ICT-2 at Narela(DTL) 7) 220/66kV 100MVA ICT-3 at Narela(DTL) 8) 220kV Bus-1 at Narela(DTL)

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						Generation Loss(MW)	Load Loss (MW)	% Generation Loss (MW)	% Load Loss (MW)	Antecedent Generation (MW)	Antecedent Load (MW)		
9	GD-1	Haryana	08-02-2024 16:22	08-02-2024 16:45	00:23	547	160	1.214	0.343	45045	46699	<p>i) During antecedent condition, 220kV DCRTPP-Rampur Ckt-1 was under construction (LLO in place of DCRTPP-Abdullapur Ckt) and 220kV DCRTPP-Rampur Ckt-2 was under shutdown. 220kV DCRTPP(HR)-Joraha(HR) ckt-1 & 2, 220kV DCRTPP(HR)-Bakana(HR) ckt-1 & 2 and 220kV DCRTPP(HR)-Unisapur(HR) ckt-1 & 2 were carrying approx. 185MW, 183MW, 47MW, 56MW, 30MW and 31MW respectively.</p> <p>ii) As reported, at 16:22hrs, 220kV DCRTPP(HR)-Joraha(HR) ckt-2 tripped due to snapping of R-ph jumper at tower location no. 8. Simultaneously, 220kV DCRTPP(HR)-Joraha(HR) ckt-1 tripped on over-loading.</p> <p>iii) After this, load shifted to remaining four cts. 220kV DCRTPP(HR)-Bakana(HR) ckt-1 & 2 and 220kV DCRTPP(HR)-Unisapur(HR) ckt-1 & 2 were carrying approx. 192MW, 202MW, 74MW and 74MW respectively. Power was flowing from 220kV DCRTPP(HR) to Bakana(HR) through 220kV DCRTPP(HR)-Bakana(HR) D/C to Salempur(HR) through 220kV Bakana(HR)-Salempur(HR) D/C and 220kV DCRTPP(HR) to Unisapur(HR) through 220kV DCRTPP(HR)-Unisapur(HR) D/C to Karna(HR) through 220kV Unisapur(HR)-Karna(HR) S/C.</p> <p>iv) As further reported, at 16:23hrs, 220kV Karna(HR)-Unisapur(HR) ckt (carrying ~123MW) tripped on transient fault (exact nature and location of fault yet to be shared).</p> <p>v) After this, 220kV DCRTPP(HR)-Bakana(HR) ckt-1 & 2 and 220kV Bakana(HR)-Salempur(HR) ckt-1 & 2 were carrying approx. 253MW, 263MW, 239MW and 233MW respectively.</p> <p>vi) During the same time, 220kV Salempur(HR)-Bakana(HR) ckt-2 also tripped due to breaking of Y-ph conductor at tower location no. 83.</p> <p>vii) Due to this tripping, DCRTPP(HR)-Bakana(HR) ckt-1 & 2, 220kV Bakana(HR)-Salempur(HR) ckt-1 and 220kV DCRTPP(HR)-Unisapur(HR) ckt-1 & 2 tripped on over-loading. Complete blackout occurred at 220kV Bakana(HR) and Unisapur(HR) S/s.</p> <p>viii) Due to tripping of all the evacuating lines at DCRTPP, 300 MW DCRTPP (Yamuna Nagar) - UNIT 1 & 2 also tripped and complete blackout occurred at 220kV DCRTPP(HR) S/s.</p> <p>ix) As per PMU at Abdullapur(PG), R-Y phase to phase fault is observed with fault clearing time of 80ms.</p> <p>x) As per SCADA, load loss of approx. 160 MW in Haryana control area and generation loss of approx. 547 MW at 220kV DCRTPP Yamunanagar(HR) are observed.</p> <p>xi) Supply at 220kV DCRTPP(HR) and Unisapur(HR) was restored within 23 minutes and Supply at Bakana(HR) was restored within 30 minutes.</p>	<p>1) 220kV DCRTPP(HR)-Joraha(HR) ckt-2</p> <p>2) 220kV DCRTPP(HR)-Joraha(HR) ckt-1</p> <p>3) 220kV Karna(HR)-Unisapur(HR) ckt</p> <p>4) 220kV Salempur(HR)-Bakana(HR) D/C to Salempur(HR) through 220kV Bakana(HR)-Salempur(HR) D/C to Karna(HR) through 220kV Unisapur(HR)-Karna(HR) S/C.</p> <p>5) 220kV DCRTPP(HR)-Unisapur(HR) ckt-1</p> <p>6) 220kV DCRTPP(HR)-Unisapur(HR) ckt-2</p> <p>7) 220kV Salempur(HR)-Bakana(HR) ckt-1</p> <p>8) 220kV DCRTPP(HR)-Bakana(HR) ckt-2</p> <p>9) 220kV DCRTPP(HR)-Bakana(HR) ckt-1</p> <p>10) 300 MW DCRTPP (Yamuna Nagar) - UNIT 1</p> <p>11) 300 MW DCRTPP (Yamuna Nagar) - UNIT 2</p>
10	GD-1	Rajasthan	14-02-2024 09:49	14-02-2024 18:23	08:34	45	0	0.089	0.000	50457	62135	<p>i) Generation of 220kV AHEJAL PSS-3 RE stations evacuates through 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL) - AHEJAL PSS 3 HB_FGARH_FBTL (AHEJAL) (AREPRL) Ckt.</p> <p>ii) During antecedent condition, AHEJAL PSS-3 RE station was generating approx. 45MW as per SCADA.</p> <p>iii) As reported, at 09:49hrs, 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJAL PSS 3 HB_FGARH_FBTL (AHEJAL) (AREPRL) Ckt tripped on mal-operation of relay leading to Bay-204 CB trip (exact reason yet to be shared).</p> <p>iv) As per PMU at AHEJAL Wind PSS-4, R-B phase to phase fault is observed with fault clearing time of 80ms. Voltage dropped to ~0.91 p.u. during the fault.</p> <p>v) As per PMU, due to tripping of 220kV AHEJAL PSS-3 line, RE (wind) generation ~155MW of the RE station lost due to loss of evacuation path.</p>	<p>1) 220 KV Adani RenewPark_SL_FGARH_FBTL (AREPRL)-AHEJAL PSS 3 HB_FGARH_FBTL (AHEJAL) (AREPRL) Ckt</p>
11	GD-1	Himachal Pradesh	16-02-2024 11:30	16-02-2024 11:36	00:06	40	400	0.073	0.645	54781	62049	<p>i) During antecedent condition, as per SCADA, power was flowing towards Kunihar through 220kV Jeori-Kunihar(HP) Ckt, 220 KV Wangtoo-Bhabha-Kunihar(HP) ckt (T-connection) and 220 KV Baddi-Kunihar(HP) Ckt-1 & 2 carrying approx. 51MW, 50MW, 57MW and 58MW. 220/115kV 80/100MVA ICT-1 & 2 at Kunihar(HP) were carrying approx. 150MW each. Bus coupler was in off position at 220kV Baddi(HP).</p> <p>ii) As reported, at 11:30 hrs, 220kV Jeori-Kunihar(HP) Ckt tripped from Jeori end on R-N phase to earth fault with fault current of 1.537KA and fault distance of 39.7km from Jeori end. Exact reason of fault yet to be shared. At the same time, 220kV Jeori-Bhabha(HP) Ckt tripped on the same fault resulting into blackout at 220/66kV Jeori(HP) S/s.</p> <p>iii) On inspection it was found that a stone crusher office was laying internet cable near Bayal below tower no. 110 span, due to which 220kV Jeori-Kunihar(HP) Ckt came in induction zone of the line and the line tripped. It was also reported that a person got injured due to same and notice by concerned office was served to the defaulting party.</p> <p>iv) As further reported, bus coupler was in on position at that time at Bhabha(HP). Hence fault was sensed by 220 KV Wangtoo-Bhabha-Kunihar(HP) Ckt (T-connection) and line tripped from Wangtoo end.</p> <p>v) Due to tripping of these two lines, 220 KV Baddi-Kunihar(HP) Ckt-1 & 2 tripped due to over-loading and 220/66kV Kunihar(HP) S/s became dead.</p> <p>vi) During this time, 220 KV Baddi-Upper Nangal(HP) Ckt, 220 KV Baddi-Madhala(HP) Ckt and 220 KV Baddi-Wardhman(HP) Ckt also tripped due to over-loading and 220kV Bus-1 at Baddi(HP) became dead.</p> <p>vii) As per SCADA, load loss of approx. 400 MW at Jeori(HP) and 220/115kV 3X13MVA ICT-2 at Mor(HP) tripped during the same time. (Exact reason yet to be shared)</p> <p>viii) As per PMU, R-N phase to earth fault is observed with delayed fault clearing time of 560ms.</p> <p>ix) As per SCADA, change in demand of approx. 510MW and change in generation of approx. 50MW in HP control area is observed. But as reported by, SLDC-HP, load loss of ~400MW (320MW at Kunihar feeding load of Solan and Shimla) and generation loss of ~40MW (20MW in Bhabha and 20MW in Giri) occurred in HP control area.</p>	<p>1) 220 KV Bhabha-Kunihar(HP) Ckt</p> <p>2) 220 KV Jeori-Kunihar(HP) Ckt</p> <p>3) 220 KV Baddi-Kunihar(HP) Ckt-1</p> <p>4) 220 KV Baddi-Kunihar(HP) Ckt-2</p> <p>5) 220 KV Baddi-Upper Nangal(HP) Ckt</p> <p>6) 220 KV Baddi-Madhala(HP) Ckt</p> <p>7) 220 KV Baddi-Wardhman(HP) Ckt</p> <p>8) 220 KV Jeori-Bhabha(HP) Ckt</p>
12	GD-1	Jammu and Kashmir	19-02-2024 19:19	19-02-2024 20:20	01:01	0	260	0.000	0.485	41035	53652	<p>i) 220/66kV Drass(PG) have double main bus arrangement at 220kV side.</p> <p>ii) During antecedent condition, approx. 234MW power was coming from Alusteng to Drass and approx. 23Mw power was going out from Drass to Kargil.</p> <p>iii) As reported, at 19:19 hrs, 220 KV Alusteng-Drass (PG) Ckt tripped on B-N phase to earth fault with distance of 96km from Drass end.</p> <p>iv) Due to this tripping supply to 220 KV Drass (PG) Ckt was lost and blackout occurred at 220/66kV Drass(PG) S/s.</p> <p>v) As per PMU at Amargarth, B-N phase to earth fault is observed with fault clearing time of 280ms.</p> <p>vi) As per SCADA, change in demand of approx. 260MW is observed in JK control area.</p>	<p>1) 220 KV Alusteng-Drass (PG) Ckt</p>
13	GD-1	Himachal Pradesh	20-02-2024 17:32	20-02-2024 19:41	02:09	0	45	0.000	0.091	45200	49340	<p>i) During antecedent condition, no generation was there at Bairasu(NH).</p> <p>ii) As reported, at 17:32hrs, 220 KV Bairasu(NH)-Pong (BB)(PG) ckt tripped on 3-phase to earth fault (zone-2 distance protection operated at Pong(BB) end) with fault distance of 76.53km and fault current of I_r=~2.602KA, I_y=~3.122KA and I_b=~3.293KA from Pong(BB) end.</p> <p>iii) During the same time, 220 KV Bairasu(NH)-Jessore (HP)(PG) ckt also tripped on 3-phase to earth fault (fault sensed in zone-2 at Jessore(HP) end) with fault distance of 54.22km and fault current of I_r=~4.513KA, I_y=~2.77KA and I_b=~2.56KA from Jessore(HP) end.</p> <p>iv) As per DR of 220 KV Bairasu(NH) (end)-Jessore(HP) (PG) Ckt, Y-B-N double phase to earth fault is observed with fault current of I_r=~2.845KA and I_b=~3.093KA from Bairasu(NH) end. Fault sensed in zone-1 at Bairasu(NH) end. Fault clearing time was approx. 54ms.</p> <p>v) As per PMU at Jalandhar(PG), 3-phase to earth fault is observed with fault clearing time of 80ms.</p> <p>vi) As per SCADA, load loss of approx. 45MW is observed in HP control area.</p>	<p>1) 220 KV Bairasu(NH)-Pong (BB)(PG) ckt</p> <p>2) 220 KV Bairasu(NH)-Jessore (HP)(PG) ckt</p>
14	GI-2	Uttar Pradesh	20-02-2024 21:47	20-02-2024 22:51	01:04	0	0	0.000	0.000	35580	44516	<p>i) 765/400/220kV Unnao(UP) has double main and transfer bus scheme at 400kV level.</p> <p>ii) During antecedent condition, 400 KV Agra-Unnao (UP) Ckt, 400 KV Unnao-Lucknow (UP) Ckt, 400 KV Unnao-Lucknow (UP) Ckt-2, 400 KV Unnao(UP)-Jehta_Hardoi Road (UP) (PG) Ckt-2, 400/220 KV 315 MVA ICT 1 at Unnao(UP), 765/400 KV 1000 MVA ICT 2 and 3 at Unnao(UP) were connected to 400KV Bus 1 at Unnao(UP).</p> <p>iii) As per SCADA, 400/220 KV 315 MVA ICT 1 at Unnao(UP), 765/400 KV 1000 MVA ICT 2 and 3 at Unnao(UP) were carrying approx. 151MW, 518MW and 535MW respectively.</p> <p>iv) As reported, at 21:47 hrs, LBB operated due to fault at Main CB of 400 KV Bareilly-Unnao (UP) Ckt-2. Hence all the elements connected to 400KV Bus 1 at Unnao(UP) tripped and 400KV Bus 1 at Unnao(UP) became dead.</p> <p>v) As per DR of 400 KV Bareilly-Unnao (UP) Ckt-2, R-N phase to earth fault is observed with fault current of 6.135KA from Unnao(UP) and 2.197KA from Bareilly(UP). Fault was sensed in zone-1 at Unnao(UP) end. Fault was cleared within 280ms from Unnao(UP) end and 130ms from Bareilly(UP) end.</p> <p>vi) As per PMU at Unnao(UP), R-N phase to earth fault is observed with fault clearing time of 280ms.</p> <p>vii) As per SCADA, no change in demand is observed in UP control area.</p>	<p>1) 400 KV Agra-Unnao (UP) Ckt</p> <p>2) 400 KV Unnao-Lucknow (UP) Ckt</p> <p>3) 400 KV Bareilly-Unnao (UP) Ckt-2</p> <p>4) 400 KV Unnao(UP)-Jehta_Hardoi Road (UP) (PG) Ckt-2</p> <p>5) 400/220 KV 315 MVA ICT 1 at Unnao(UP)</p> <p>6) 765/400 KV 1000 MVA ICT 2 at Unnao(UP)</p> <p>7) 765/400 KV 1000 MVA ICT 3 at Unnao(UP)</p> <p>8) 400KV Bus 1 at Unnao(UP)</p>
15	GD-1	Jammu and Kashmir	21-02-2024 10:00	21-02-2024 11:50	01:50	0	115	0.000	0.205	49115	56164	<p>i) 220/66kV Drass(PG) have double main bus arrangement at 220kV side.</p> <p>ii) During antecedent condition, approx. 47MW power was coming from Alusteng to Drass and approx. 45MW power was going out from Drass to Kargil.</p> <p>iii) As reported, at 10:00 hrs, 220 KV Alusteng-Drass (PG) Ckt tripped on R-B phase to phase fault with fault current of 2KA and 2.2KA from Alusteng end in R and B phases respectively and fault distance of 61km from Alusteng end and 64.9km from Drass end.</p> <p>iv) Due to this tripping supply to 220 KV Drass (PG) Kargil Ckt was lost and blackout occurred at 220/66kV Drass(PG) S/s.</p> <p>v) As per PMU at Amargarth, R-B phase to phase fault is observed with fault clearing time of 80ms.</p> <p>vi) As per SCADA, change in demand of approx. 115MW is observed in JK control area.</p>	<p>1) 220 KV Alusteng-Drass (PG) Ckt</p>
16	GD-1	Punjab	24-02-2024 10:31	24-02-2024 12:03	01:32	123	70	0.231	0.116	53134	60108	<p>i) During antecedent condition, 220 KV Luthiana(PG) Dandhari Kalan(PS) Ckt was not in service. 126MW Unit-3 at Bhakra(BBM) was generating approx. 123MW.</p> <p>ii) As reported, at 10:31hrs, Y-phase jumper (exact location yet to be shared) of 220 KV Lalton Kalan(PS)-Dandhari Kalan(PS) (PSTCL) Ckt snapped. CB didn't open from Dandhari Kalan end, due to which 220 KV Jamalpur(BB)-Dandhari Kalan(PS) (PSTCL) Ckt-1 & 2 tripped from Jamalpur(BB) end on back-up earth fault protection operation.</p> <p>iii) As 220 KV Luthiana(PG) Dandhari Kalan(PS) Ckt was not in service and 220 KV Lalton Kalan(PS)-Dandhari Kalan(PS) (PSTCL) Ckt, 220 KV Jamalpur(BB)-Dandhari Kalan(PS) (PSTCL) Ckt-1 & 2 already tripped, hence complete blackout occurred at Dandhari Kalan(PS) S/s.</p> <p>iv) During the same time, as per DR, bus bar protection (zone-2) operated at 220KV Bus 3 at Jamalpur(BB) (exact reason yet to be shared) and all other elements connected to Bus-3 tripped and Bus-3 became dead (bus-wise arrangement of elements yet to be shared).</p> <p>v) As per SCADA, 126MW Unit-3 at Bhakra(BBM) tripped during the same time (exact reason yet to be shared).</p> <p>vi) As per PMU at Jalandhar(PS), no fault is observed in the system.</p> <p>vii) As per SCADA, generation loss of approx. 123 MW is observed at Bhakra(BBM).</p> <p>viii) As per SCADA, load loss of approx. 70 MW is observed in Punjab control area.</p>	<p>1) 220 KV Lalton Kalan(PS)-Dandhari Kalan(PS) (PSTCL) Ckt</p> <p>2) 220 KV Gangawal-Jamalpur (BB) Ckt-2</p> <p>3) 220 KV Jamalpur(BB)-Dandhari Kalan(PS) (PSTCL) Ckt-1</p> <p>4) 220 KV Jamalpur(BB)-Dandhari Kalan(PS) (PSTCL) Ckt-1</p> <p>5) 220 KV Jamalpur(BB)-Dandhari Kalan(PS) (PSTCL) Ckt-2</p> <p>6) 220KV Bus 3 at Jamalpur(BB)</p> <p>7) 126MW Unit-3 at Bhakra(BB)</p>

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



Sl No.	Category of Grid Event (GI for GI2/ 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)		
17	GI-2	Rajasthan	25-02-2024 12:55	25-02-2024 14:08	01:13	1890	545	3.714	0.942	50888	57861	i) During antecedent condition, MVA power flows of 400/220 kV 500 MVA ICT 1, 2 & 3 at Bhadla(RS) were 417MVA, 452MVA and 454MVA respectively as per SCADA. ii) As reported, at 12:55hrs, 400/220 kV 500 MVA ICT 1 at Bhadla(RS) tripped due to burning of isolator (exact reason, nature and location of fault yet to be shared) iii) Due to this tripping, 400/220 kV 500 MVA ICT 2 and 3 at Bhadla(RS) got overloaded and tripped due to over-current protection operation. iv) As per PMU at Bikaner(PG), R-Y phase to phase fault converted to 3-phase fault is observed with delayed fault clearance time of 880 ms. v) As per SCADA, change in demand of approx. 5450MW is observed in Rajasthan control area. vi) As per SCADA, change in NR total solar generation of approx. 1890MW is observed.	1) 400/220 kV 500 MVA ICT 1 at Bhadla(RS) 2) 400/220 kV 500 MVA ICT 2 at Bhadla(RS) 3) 400/220 kV 500 MVA ICT 3 at Bhadla(RS)
18	GD-1	Uttar Pradesh	27-02-2024 13:57	27-02-2024 14:11	00:14	580	0	1.199	0.000	48368	52560	i) During antecedent condition, 500MW Anpara-D TPS Unit-1&2 were generating approx. 285MW & 295MW respectively and evacuating from 765kV Anapara_D-Obra_C ckt carrying approx 582MW. ii) As reported, at 13:57hrs, R-N phase to earth fault occurred on 765kV Anapara_D-Obra_C ckt. Fault distance was ~8.5km from Obra_C_end, 2-1 from Obra_C_end and 2-2 from Anpara_D_end. On this fault, 765kV Anapara_D-Obra_C ckt tripped from both ends however, delayed clearance occurred at Anpara_D_end. iii) At the same time, 765 kV Anapara_CCLANI-Anapara_D(UPI) (UPI) Ckt-1 tripped from Anpara_C_end and 400 kV Anpara-Anpara_D (UPI) Ckt-1&2 tripped from Anpara end on O/C E/F protection operation. Protection setting of O/C E/F protection in these lines need to be reviewed. iv) With the tripping of aforementioned lines, 500MW Unit-1&2 at Anpara_D TPS tripped due to loss of evacuation path. v) As per PMU at Anpara TPS, R-N phase to earth fault with delayed clearance of 480ms is observed. vi) As per SCADA, loss of generation of approx. 580MW is observed at Anpara_D TPS in UP control area.	1) 765 kV Anapara_D(UPI) - Bus 1 2) 765 kV Anapara_D(UPI) - Bus 2 3) 765/400 kV 1000 MVA ICT 1 at Anpara_D(UPI) 4) 765 kV Obra_C_TPS-Anapara_D (UPI) ckt 5) 765 kV Anapara_CCLANI-Anapara_D(UPI) (UPI) Ckt-1 6) 500 MW Anpara-D TPS - UNIT 1 7) 500 MW Anpara-D TPS - UNIT 2 8) 400 kV Anpara-Anpara_D (UPI) Ckt-1 9) 400 kV Anpara-Anpara_D (UPI) Ckt-2
19	GI-2	Rajasthan	28-02-2024 06:58	28-02-2024 07:38	00:40	0	680	0.000	1.314	42410	51769	i) During antecedent condition, 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-1 & 2 were carrying approx. 205MW towards Dausa and 400/220 kV 315 MVA ICT 1 & 2 at Hindaun(RS) were carrying approx. 257MW & 238MW respectively. ii) As reported, at 06:58hrs, 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-1 tripped due to snapping of B-ph dropper conductor at Dausa end. Due to tripping of 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-1, loading of 220kV Anta-Sakatpura ckt and 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-2 increased. Further, 220kV Anta-Sakatpura ckt and 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-2 also tripped from Sakatpura and Dausa end respectively due to overloading. Exact details of protection operation yet to be received. iii) Due to tripping of aforementioned lines, load of Dausa now started drawing power from Hindaun leading to overloading of 400/220kV ICTs at Hindaun and ICT-1&2 at Hindaun tripped on over current protection operation. iv) As per PMU at Bassi(PG), no fault in system is observed. v) As per SCADA, change in demand of approx. 680MW is observed in Rajasthan control area.	1) 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-1 2) 220 kV Bassi(PG)-Dausa(RS) (PG) Ckt-2 3) 220 kV Anta(SKT)-Sakatpura(RS) (RS) Ckt-1 4) 400/220 kV 315 MVA ICT 1 at Hindaun(RS) 5) 400/220 kV 315 MVA ICT 2 at Hindaun(RS)
20	GI-2	Rajasthan	28-02-2024 18:16	28-02-2024 20:35	02:19	200	0	0.487	0.000	41038	50247	i) During antecedent condition, 250MW Suratgarh TPS Unit-3,4&5 were generating approx. 153MW, 203MW & 205MW respectively, 400/220kV ICT-2 was under shutdown and 250MW Unit-6 was not in service. ii) As reported, at 18:16hrs, Bus bar protection of 400kV Bus-2 at Suratgarh TPS operated. Event occurred during renovation work of protection system of ICT-2. During investigation, LBB cable of ICT-2 coming to bus bar panel was found earth. Due to operation of bus bar protection of 400kV Bus-2 at Suratgarh, 400 kV Suratgarh SCTPS(RVUN)-Suratgarh(RS) (RS) Ckt-2, 400 kV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1 and 250 MW Suratgarh TPS - UNIT 4 tripped. All these elements were connected to 400kV Bus-2 at Suratgarh S/s. iii) As per PMU at Bikaner(PG), no fault in system is observed. iv) As per SCADA, loss of generation of approx. 200MW is observed at Suratgarh TPS due to tripping of 250MW Suratgarh TPS Unit-4 in Rajasthan control area.	1) 400 kV Suratgarh SCTPS(RVUN)-Suratgarh(RS) (RS) Ckt-2 2) 400 kV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1 3) 250 MW Suratgarh TPS - UNIT 4

Details of Grid Events during the Month of February 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	13:22 / 02-02-2024	14:26 / 02-02-2024	01:04	-	26	-	0.04%	73800	68305	At 13:22 Hrs / 02-02-2024, Flashover of Y-phase Potential Transformer of 220 kV Kharghar-Bus-1 resulted in tripping of 220 kV Kharghar-Bus-1 and all connected elements on busbar protection operation. Load loss of around 26 MW occurred due to the event.	Tripping of following elements: 1. 220 kV Kharghar-Bus-1 2. 220 kV Kharghar-Uran-1 3. 220 kV Kharghar-Panvel 4. 220 kV Kharghar-Sonkar 5. 220 kV Kharghar-Borivali(M)-1 6. 400/220 kV 315 MVA Kharghar-ICT 3
2	GD-1	WR	20:01 / 04-02-2024	02:05 / 05-02-2024	06:04	29	-	0.04%	-	68384	58109	At 20:01 Hrs / 04-02-2024, 220 kV Bhuj-Gadhisa and 220 kV Bhuj-Baranda tripped on Y-E fault and B-E fault respectively due to falling of conductor on gantry at Bhuj End. Generation loss of 24 MW and 5 MW reported at Baranda (ASPL) and Gadhisa (Renew AP2) Wind Power Plants respectively.	Tripping of following elements: 1. 220 kV Bhuj-Baranda 2. 220 kV Bhuj-Gadhisa
3	GD-1	WR	18:01 / 05-02-2024	19:55 / 05-02-2024	01:54	6	-	0.01%	-	75788	66658	At 18:01 Hrs / 05-02-2024, 220 kV Bhuj Kotda Madh tripped on B-E fault from Kotda Madh end only, auto recloser successfully operated from Bhuj end. Generation loss of 6 MW occurred at Kotda Madh (Alfanzar) wind power plant due to loss of evacuation path.	Tripping of following elements: 1. 220 kV Kotda Madh-Bhuj
4	GD-1	WR	09:41 / 06-02-2024	10:04 / 06-02-2024	00:23	-	500	-	0.69%	78442	72530	At 09:41 Hrs/06.02.2024, flashover in B-phase bus side isolator of 400 kV Gandhar-Hazira-2 at Gandhar end resulted in bus bar protection operation at 400 kV Gandhar Bus-1 and tripping of all connected elements. 400 kV Hazira-Bus-1&2 also tripped as 400 kV Gandhar-Hazira-1 was already under planned shutdown since 09:07 hrs / 06.02.2024. Load loss of around 500 MW occurred at Hazira (MANSI) due to loss of evacuation path.	Tripping of following elements: 1. 400 kV Gandhar-Hazira-1&2 2. 400/220 kV Hazira-ICT-1, 8.2
5	GD-1	WR	18:10 / 07-02-2024	19:28 / 07-02-2024	01:18	115	-	0.16%	-	72368	65000	At 18:10 Hrs/07.02.2024, 220 kV Bhuj-Gadhisa tripped on R-E fault from Gadhisa end only and auto recloser successful at Bhuj end. Generation loss of 115MW occurred at Gadhisa (Renew Power) wind power plant due to loss of evacuation path.	Tripping of following elements: 1. 220 kV Bhuj-Gadhisa
6	GD-1	WR	02:26 / 10-02-2024	03:24 / 10-02-2024	00:58	-	-	-	-	61355	54686	At 02:26 Hrs/10-02-2024, 220 kV Tillari-Halkarni and 220 kV Tillari-Amona tripped on distance protection operation from remote ends due to fault in 33 kV Kanur feeder connected to Halkarni. No load loss / generation loss occurred due to the event.	Tripping of following elements: 1. 220 kV Tillari-Halkarni 2. 220 kV Tillari-Amona
7	GD-1	WR	15:28 / 12-02-2024	22:37 / 19-02-2024	175:09	0	-	0.00%	-	72348	68302	At 15:28 Hrs / 12-02-2024, 332 kV Rajgarh(MP)-Rajgarh(PG)-1 bay at Rajgarh(MP) tripped on distance protection operation from remote ends due to fault in 33 kV Vav-Bus-2 and all connected elements on bus bar protection operation. Prior to the event 400 kV Vav-Bus-1 and 400 kV Vav-Kosamba were already under forced outage from 14-11-2023 due to problem in GIS module. Due to outage of 400 kV Vav-Bus-2, 400 kV Vav-Bus-1 and 400 kV Vav-Kosamba were already under forced outage from 14-11-2023 due to problem in GIS module.	Tripping of following elements: 1. 400 kV Vav-Jhanor 2. 400 kV Vav-Navsari
8	GD-1	WR	18:38 / 12-02-2024	22:07 / 12-02-2024	03:29	5	-	0.01%	-	68384	58109	At 20:01 Hrs / 12-02-2024, 220 kV Baranda-Bhuj tripped on B-E fault. On patrolling it was found that tripping was done by some local villagers by throwing foreign object on line near tower number 231. Generation loss of around 5 MW occurred reported at Baranda (ASPL) Wind Power Plant due to loss of evacuation path.	Tripping of following elements: 1. 220 kV Bhuj-Baranda
9	GD-1	WR	19:09 / 13-02-2024	00:38 / 14-02-2024	05:29	36.26	-	0.05%	-	73007	64860	At 19:09 Hrs / 13-02-2024, 220 kV Baranda-Bhuj tripped on B-E fault. On patrolling it was found that tripping was done by some local villagers by throwing foreign object on line near tower number 238. Generation loss of around 36.26 MW occurred reported at Baranda (ASPL) Wind Power Plant due to loss of evacuation path.	Tripping of following elements: 1. 220kV Bhuj-Baranda
10	GD-1	WR	19:15 / 14-02-2024	01:11 / 15-02-2024	05:56	78.24	-	0.11%	-	73908	64020	At 19:15 Hrs / 14-02-2024, 220 kV Baranda-Bhuj tripped on B-E fault. On patrolling it was found that tripping was done by some local villagers by throwing foreign object on line near tower number 260. Generation loss of around 78.24 MW occurred reported at Baranda (ASPL) Wind Power Plant due to loss of evacuation path.	Tripping of following elements: 1. 220kV Bhuj-Baranda
11	GD-1	WR	18:48 / 15-02-2024	21:37 / 15-02-2024	02:49	47.5	-	0.06%	-	74058	65280	At 18:48 Hrs / 15-02-2024, 220 kV Baranda-Bhuj tripped on B-E fault. On patrolling it was found that tripping was done by some local villagers by throwing foreign object on line near tower number 260. Generation loss of around 47.5 MW occurred reported at Baranda (ASPL) Wind Power Plant due to loss of evacuation path.	Tripping of following elements: 1. 220kV Bhuj-Baranda
12	GI-1	WR	14:21 / 19-02-2024	18:10 / 19-02-2024	03:49	49.1	-	0.07%	-	68439	62866	At 14:21 Hrs / 19-02-2024, Failure of B-phase suspension disc insulator string of 220 kV Rajgarh(MP)-Rajgarh(PG)-1 bay at Rajgarh(MP) caused in flashover from gantry to conductor resulting in Busbar protection operation of 220 kV Rajgarh(MP) Bus-1 and tripping of all connected elements. Generation loss of 49.1 MW occurred at Clean Wind Power due to the event.	Tripping of following Elements: 1. 220 kV Rajgarh(MP)-Bus-1 2. 220 kV Rajgarh(MP)-Rajgarh(PG)-1 3. 220 kV Rajgarh(MP)-Clean Wind Power 4. 220/132 kV Rajgarh(MP)-ICT-2 (160 MVA)
13	GD-1	WR	12:09 / 24-02-2024	16:41 / 24-02-2024	04:32	-	400	-	0.58%	75696	68566	At 12:09 Hrs / 24-02-2024, 220 kV Siltara-Main Bus Potential Transformer cable was short circuited resulting in tripping of 220 kV Siltara-Dharehli, 220 kV Siltara-Raita, 220 kV Urli-Siltara, 220kV and Siltara-Rajpur(PG). 220 kV Siltara-Main Bus became dead due to these trippings (Bus bar protection not operated). Generation loss of 400 MW occurred at Siltara due to the event.	Tripping of following Elements: 1. 220 kV Siltara-Dharehli 2. 220 kV Siltara-Raita 3. 220 kV Urli-Siltara 4. 220kV and Siltara-Rajpur(PG) 5. 220 kV Siltara-Main Bus
14	GI-1	WR	04:57 / 25-02-2024	06:20 / 25-02-2024	01:23	-	-	-	-	73006	66947	At 04:57 Hrs / 25-02-2024, Busbar protection operation in 220 kV Kansari-Bus-2 resulted in tripping of 220 kV Kansari-Bus-2 and all connected elements. On inspection it is suspected that the fault might have occurred due to bird coming near to the gantry. No load loss occurred due to the event.	Tripping of following Elements: 1. 220 kV Kansari-Bus-2 2. 220 kV Kansari-Tharad 3. 220 kV Kansari-Thaver-2 4. 220 kV Kansari-Deodar-2 5. 220 kV Kansari-Jangral-2 6. 220 kV Kansari-Palampur-2 7. 400/220 kV Kansari-ICT-3&4 (315 MVA) 8. 220/66 kV Kansari-ICT-2 (100 MVA) 9. 220/66 kV Kansari-ICT-3 (160 MVA)
15	GI-1	WR	12:11 / 25-02-2024	13:17 / 25-02-2024	01:06	47	-	0.06%	-	76406	69412	At 12:11 Hrs / 25-02-2024, 220/33 kV Kotda Madh-ICT-1&2 tripped on under voltage protection operation for fault in 33 kV Feeders. On checking the relay settings it was observed that the Time setting for under voltage protection was neither coordinated with LVRT settings of WPGs. Generation loss of 47 MW occurred at Kotda Madh (Alfanzar) due to the event.	Tripping of following Elements: 1. 220/33 kV Kotda Madh-ICT-1&2
16	GD-1	WR	11:16 / 26-02-2024	12:28 / 26-02-2024	01:12	434	-	0.56%	-	78149	71043	At 11:16 Hrs / 26-02-2024, 400 kV Tamnar-TRN Energy-1&2 tripped from TRN Energy end only on receipt of Direct Trip (DT). On inspection no fault or abnormality found in line or Tamnar end. Generation loss of 434 MW occurred at TRN Energy due to loss of evacuation path.	Tripping of following Elements: 1. 400 kV Tamnar-TRN Energy-1&2 2. TRN Unit-1&2 (300 MW)

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



Sl No.	Category of Grid Event	Affected Area	Time and Date of occurrence of Grid Event	Time and Date of Restoration	Duration (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 for GI2/ 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	Tamil Nadu	03-02-2024 19:22	05-02-2024 10:06	14:44	0	0	0.00%	0.00%	43266	46525	Complete outage of 765kV Ariyalur and 765kV NCPs of TANTRANSKO. 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 the operation of over-voltage protection and DT was sent to the remote end. From the DR at Thiruvalem end, voltages observed are V _r = 66.62kV, V _w = 58.43kV, V _u = 36.11kV which is 105% of rated voltage. Since 765kV Ariyalur and 765kV NCPs are being radially fed from 765kV Ariyalur-Thiruvalem-2 tripping of this line led to a complete outage of 765kV Ariyalur and 765kV NCPs.	1. 765kV Ariyalur Thiruvalem Line-2
2	GD-1	Karnataka	22-02-2024 14:18	22-02-2024 14:53	0:35	0	710	0.00%	1.14%	52763	62448	Complete outage of 220kV Kadur, 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 Kadur, 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 ICT-1 and 400/220kV Talaguppa ICT-3. 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.	1. 220kV Shimoga-Anthrasanahalli 2. 220kV Shimoga-Hassan 3. 400/220kV Talaguppa ICT-1 4. 400/220kV Talaguppa ICT-3
3	GD-1	Karnataka	23-02-2024 14:10	23-02-2024 14:54	0:44	0	181	0.00%	0.29%	54025	63381	Complete Outage of 220kV Kadra PH of KPCL and 220kV/110kV Karwar SS of KPTCL. During antecedent conditions, 220kV Kaiga Kadra and 220kV Kaiga Kodsally were under outage. 220kV Kadra PH and 220kV/110kV Karwar SS were being radially fed through 220kV Kadra Kodsally line. As per the reports submitted, the triggering incident was an R-N fault in 220kV Kadra Kodsally line. Tripping of this line led to a complete outage of 20kV Kadra PH and 220kV/110kV Karwar SS.	1. 220kV Guttur-Davanagere-1&3
4	GD-1	Karnataka	24-02-2024 06:52	24-02-2024 11:52	5:00	118	0	0.30%	0.00%	39436	54735	Complete Outage of 220kV Kadra PH of KPCL and 220kV/110kV Karwar SS of KPTCL. During antecedent conditions, 220kV Kaiga Kadra and 220kV Kaiga Kodsally were under outage. 220kV Kadra PH and 220kV/110kV Karwar SS were being radially fed through 220kV Kadra Kodsally line. As per the reports submitted, the triggering incident was an R-N fault in 220kV Kadra Kodsally line. Tripping of this line led to a complete outage of 20kV Kadra PH and 220kV/110kV Karwar SS.	1. 220kV Kadra Kodsally
5	GI-1	Karnataka	07-02-2024 13:14	07-02-2024 14:15	1:01	0	49	0.00%	0.08%	52454	58574	Tripping of 220kV Bus-1 of 220kV/66kV Chintamani SS of KPTCL. As per the reports submitted, the triggering incident was 220kV Bus-1 BBP maloperation causing all the line connected to 220kV Bus-1 to trip.	1. 220kV Kolar Chintamani Line-1 2. 220kV Chintamani Srinisapuram Line-2 3. 220kV/66kV Chintamani Auto Transformer-1
6	GI-2	Andhra Pradesh	14-02-2024 06:58	14-02-2024 10:16	3:18	0	0	0.00%	0.00%	42948	56288	Tripping of 400kV Bus-1 of 400kV/220kV Kalpaka SS of APTRANSCO. As per the reports submitted, the triggering incident was isolator failure in 400kV Kalpaka Simhadri Line-4 at Kalpaka SS causing a B-N fault in 400kV Bus-1. Immediately, BBP operated and all the elements connected to the Bus-1 tripped.	1. 400kV Kalpaka-Simhadri-4, 2. 400kV Hinduja-Kalpaka-1 3. 400/220kV ICT-1 at Kalpaka
7	GI-1	Telangana	27-02-2024 17:32	28-02-2024 21:06	3:34	0	0	0.00%	0.00%	43952	55879	Tripping of 220kV Bus-2 of 220kV KTPS station of TSEGENCO. As per the reports submitted, the triggering incident was LBB maloperation in 220kV KTPS Nunna line which is connected to 220kV Bus-2 at the KTPS end. Immediately all the elements connected to Bus-2 tripped.	1. 220kV KTPS Nunna 2. 220kV KTPS BG Kothuru 3. 220kV KTPS Manuguru Line-2

Details of Grid Events during the Month of February 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	Dhanbad	16.02.2024 09:15	16.02.2024 11:52	02:37	0	90	0.00%	0.43%	30046	20809	At 09:15 Hrs on 16.02.2024, Bus Bar protection of both bus operated (due to Shorting of B-Phase MB#2 and Y-Phase MB#1 due to some foreign element) at 220/132 kV Dhanbad S/S which led to total power failure at 220/132 kV Dhanbad (DVC) S/S. Around 90 MW load loss occurred. 220kV Dhanbad Bus normalized through 220 kV Dhanbad-Giridih ckt#1 at 11:52 hrs.	220 kV Main Bus-1 & 2 at Dhanbad 220 kV Marthon-Dhanbad D/c 220 kV Giridih-Dhanbad D/c 220 kV CTPS B-Dhanbad D/c 2*220/132 kV ATR at Dhanbad

Details of Grid Events during the Month of February 2024 in North Eastern 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 I	Churachandpur and Thanlon areas of Manipur power system	01-02-2024 22:47	01-02-2024 23:25	00:38:00	0	8	0.00%	0.40%	1518	1983	Churachandpur and Thanlon areas of Manipur Power system was connected with the rest of the grid by 132 kV Ningthoukhong-Churachandpur II line. 132 kV Ningthoukhong-Churachandpur I line is under outage since 13/01/2024. Also, 132 kV Churachandpur-Kakching & 132 kV Churachandpur-Elangkangpokpi lines is out since 08/06/2023. At 22:47 hrs of 01/02/2024, 132 kV Ningthoukhong-Churachandpur II line tripped and Churachandpur and Thanlon areas of Manipur Power system got separated from rest of the grid due to no source available in this area. Power was extended to Churachandpur and Thanlon areas of Manipur Power system by charging 132 kV Ningthoukhong-Churachandpur II line at 23:25 Hrs of 01/02/2024.	132 kV Ningthoukhong-Churachandpur II
2	GD I	Churachandpur and Thanlon areas of Manipur power system	02-02-2024 01:37	02-02-2024 06:45	05:08:00	0	5	0.00%	0.33%	1181	1506	Churachandpur and Thanlon areas of Manipur Power system was connected with the rest of the grid by 132 kV Ningthoukhong-Churachandpur II line. 132 kV Ningthoukhong-Churachandpur I line is under outage since 13/01/2024. Also, 132 kV Churachandpur-Kakching & 132 kV Churachandpur-Elangkangpokpi lines are out since 08/06/2023. At 01:37 hrs of 02/02/2024, 132 kV Ningthoukhong-Churachandpur II line tripped and Churachandpur and Thanlon areas of Manipur Power system got separated from rest of the grid due to no source available in this area. Power was extended to Churachandpur and Thanlon areas of Manipur Power system by charging 132 kV Ningthoukhong-Churachandpur II line at Hrs of 02/02/2024.	132 kV Ningthoukhong-Churachandpur II
3	GD I	Ningthoukhong, Churachandpur and Thanlon areas of Manipur power system	02-02-2024 10:05	02-02-2024 10:32	00:27:00	0	18	0.00%	0.84%	1649	2135	Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system was connected with the rest of the grid by 132 kV Loktak-Ningthoukhong, 132 kV Imphal(PG)-Ningthoukhong and 132 kV Ningthoukhong-Churachandpur II lines. 132 kV Ningthoukhong-Churachandpur I line is under outage since 13/01/2024. Also, 132 kV Churachandpur-Kakching & 132 kV Churachandpur-Elangkangpokpi lines is out since 08/06/2023. At 10:05 hrs of 02/02/2024, 132 kV Loktak-Ningthoukhong & 132 kV Imphal(PG)-Ningthoukhong lines tripped and Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system got separated from rest of the grid due to no source available in this area. Power was extended to Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system by charging 132 kV Imphal(PG)-Ningthoukhong line at 10:32 Hrs of 02/02/2024.	132 kV Loktak-Ningthoukhong & 132 kV Imphal(PG)-Ningthoukhong lines
4	GD I	Ningthoukhong, Churachandpur and Thanlon areas of Manipur power system	02-02-2024 18:44	02-02-2024 19:16	00:32:00	0	19	0.00%	0.76%	2821	2492	Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system was connected with the rest of the grid by 132 kV Loktak-Ningthoukhong, 132 kV Imphal(PG)-Ningthoukhong and 132 kV Ningthoukhong-Churachandpur II lines. 132 kV Ningthoukhong-Churachandpur I line is under outage since 13/01/2024. Also, 132 kV Churachandpur-Kakching & 132 kV Churachandpur-Elangkangpokpi lines is out since 08/06/2023. At 18:44 hrs of 02/02/2024, 132 kV Loktak-Ningthoukhong & 132 kV Imphal(PG)-Ningthoukhong lines tripped and Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system got separated from rest of the grid due to no source available in this area. Power was extended to Ningthoukhong, Churachandpur and Thanlon areas of Manipur Power system by charging 132 kV Imphal(PG)-Ningthoukhong line at 19:16 Hrs of 02/02/2024.	132 kV Loktak-Ningthoukhong & 132 kV Imphal(PG)-Ningthoukhong lines
5	GD I	Churachandpur and Thanlon areas of Manipur power system	08-02-2024 12:57	08-02-2024 15:09	02:12:00	0	7	0.00%	0.34%	1470	2033	Churachandpur and Thanlon areas of Manipur Power system was connected with the rest of the grid by 132 kV Ningthoukhong-Churachandpur II line. 132 kV Ningthoukhong-Churachandpur I line is under outage since 13/01/2024. Also, 132 kV Churachandpur-Kakching & 132 kV Churachandpur-Elangkangpokpi lines are out since 08/06/2023. At 12:57 hrs of 08/02/2024, 132 kV Ningthoukhong-Churachandpur II line tripped and Churachandpur and Thanlon areas of Manipur Power system got separated from rest of the grid due to no source available in this area. Power was extended to Churachandpur and Thanlon areas of Manipur Power system by charging 132 kV Ningthoukhong-Churachandpur II line at 15:09 Hrs of 08/02/2024.	132 kV Ningthoukhong-Churachandpur II
6	GD 1	Churachandpur and Thanlon area of Manipur power system	21-02-2024 06:57	21-02-2024 07:31	00:34:00	0	2	0.00%	0.09%	1680	2202	Due to the outage of 132 kV Churachandpur-Kakching, 132 kV Churachandpur-Elangkangpokpi and 132 kV Ningthoukhong-Churachandpur I line, Churachandpur and Thanlon area of Manipur radially connected with rest of the grid with through 132 kV Ningthoukhong-Churachandpur II line. At 06:57 Hrs of 21.02.2024, 132 kV Ningthoukhong-Churachandpur II line tripped resulted into the blackout of the Churachandpur and Thanlon area of Manipur power system. Power was extended to 132 kV Churachandpur S/S by charging 132 kV Ningthoukhong-Churachandpur II Line at 07:31 Hrs of 21-02-2024.	132 kV Ningthoukhong-Churachandpur II
7	GD 1	Kolasib, Turial and Bairabi areas of Mizoram Power System	22-02-2024 13:47	22-02-2024 16:23	02:36:00	0	5	0.00%	0.27%	1254	1861	Kolasib, Turial and Bairabi areas of Mizoram Power System were connected with rest of NER Grid through 132 kV Badarpur-Kolasib line and 132 kV Aizawl-Kolasib line. At 13:47 Hrs of 22-02-2024, 132 kV Badarpur-Kolasib and 132 kV Aizawl-Kolasib tripped. Due to tripping of this element, Kolasib, Turial and Bairabi areas of Mizoram Power System were isolated from NER Grid and collapsed due to no source available in these areas. Power was extended to Kolasib, Turial and Bairabi areas of Mizoram Power System by charging 132 kV Aizawl-Kolasib line at 16:23 Hrs, subsequently 132 kV Badarpur-Kolasib line at 16:24 Hrs of 22.02.2024.	132 kV Badarpur-Kolasib & 132 kV Aizawl-Kolasib
8	GD 1	Karong area of Manipur Power System	28-02-2024 20:40	28-02-2024 21:56	01:16:00	0	15.8	0.00%	0.64%	2499	2455	132 kV Karong Substation of Manipur Power System was connected with rest of NER Grid via 132kV Karong-Kohima and 132 kV Karong-Imphal (Yurembam) lines. At 20:40 Hrs of 28.02.2024, 132kV Karong-Kohima and 132 kV Karong-Imphal (Yurembam) lines tripped. Due to tripping of these elements, Karong area of Manipur Power System was isolated from NER Grid and collapsed due to no source available in this area. Power supply was extended to Karong area of Manipur Power System by charging 132kV Karong-Kohima at 21:56 Hrs of 28.02.2024.	132kV Karong-Kohima & 132 kV Karong-Imphal (Yurembam)
9	GI 2	AGBPP	23-02-2024 06:31	-	-	223	0	13.43%	0.00%	1660	2065	AGBPP U-7 (i.e. STG-3) under tripped condition since 12-02-2024 due to cooling water system failure (Under Planned shutdown from 00:07 Hrs of 13.02.2024). As reported from AGBPP, at 06:31 Hrs, station transformer tripped which lead to tripping all gas compressors and subsequently tripped all available units (U1,U2, U3, U4, U5, U6, U8 & U9). Restoration time of various units are as follows:- Unit 1 : 23-02-2024 16:22 Hrs Unit 2 : 23-02-2024 08:56 Hrs Unit 3 : 23-02-2024 09:54 Hrs Unit 4 : 23-02-2024 09:32 Hrs	All available Units