

BHUTAN POWER CORPORATION LIMITED

BHUTAN POWER SYSTEM OPERATOR

THIMPHU: BHUTAN



ANNUAL TRANSMISSION SYSTEM PERFORMANCE REPORT FOR THE YEAR 2021

JANUARY-2022

Sl. No.	Table of Contents	Page No.
1.0	INTRODUCTION	3
2.0	PERFORMANCE OF GENERATING STATIONS	3
2.1	POWER GENERATION	3
2.2	PLANT FACTOR	5
3.0	PEAK DEMAND, ENERGY AVAILABILITY AND REQUIREMENT FOR THE COUNTRY.....	8
3.1	NATIONAL LOAD.....	8
3.2	WESTERN GRID PEAK LOAD.....	10
3.3	EASTERN GRID PEAK LOAD	11
4.0	EXPORT AND IMPORT OF ELECTRICITY TO/FROM NEIGHBORING COUNTRIES.....	12
4.1	EXPORT OF ELECTRICITY TO NEIGHBORING COUNTRY	12
4.2	IMPORT OF ELECTRICITY FROM NEIGHBORING COUNTRY	13
5.0	FREQUENCY PROFILE: MAXIMUM AND MINIMUM FREQUENCY RECORDED AND THE FREQUENCY DURATION IN DIFFERENT FREQUENCY BANDS	15
6.0	VOLTAGE PROFILE OF SELECTED SUBSTATIONS.....	16
7.0	MAJOR GENERATING AND TRANSMISSION OUTAGE.....	19
8.0	TRANSMISSION CONSTRAINTS.....	19
9.0	INSTANCES OF PERSISTENT OR SIGNIFICANT NON-COMPLIANCE WITHIN THE GIRD CODE REGULATION.....	19

1.0 INTRODUCTION

In compliance to Grid Code Regulation 2008, Clause No. 6.14.2.1, this office prepared an annual report covering the performance of the Transmission System and details as required by the Ministry and the Authority annually for development of power system master plan and formulation of other policy decisions, thus this report contains the performance of Transmission System for the year 2019.

All the index and other calculations in this report have been executed based on the data received from substations and generating plants.

2.0 PERFORMANCE OF GENERATING STATIONS

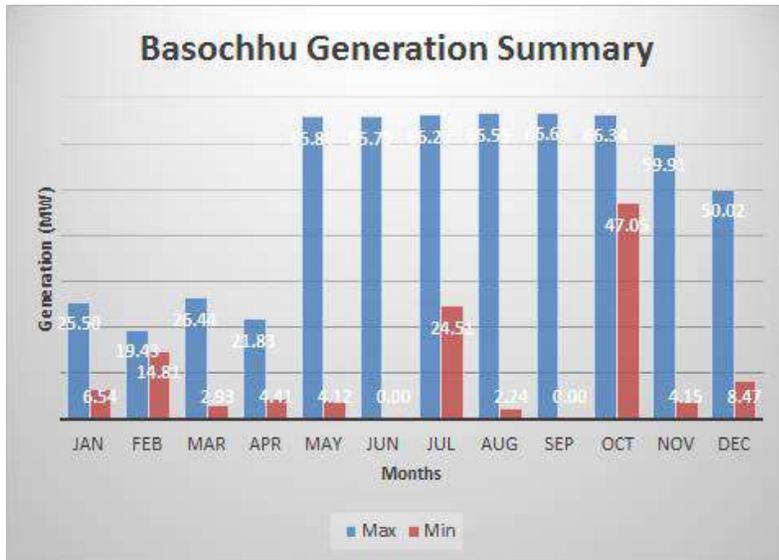
2.1 POWER GENERATION

The maximum individual plant generation was recorded as 1122.00 MW by the Tala Hydropower Plant, followed by 792.05 MW by Mangdichu Hydropower Plant.

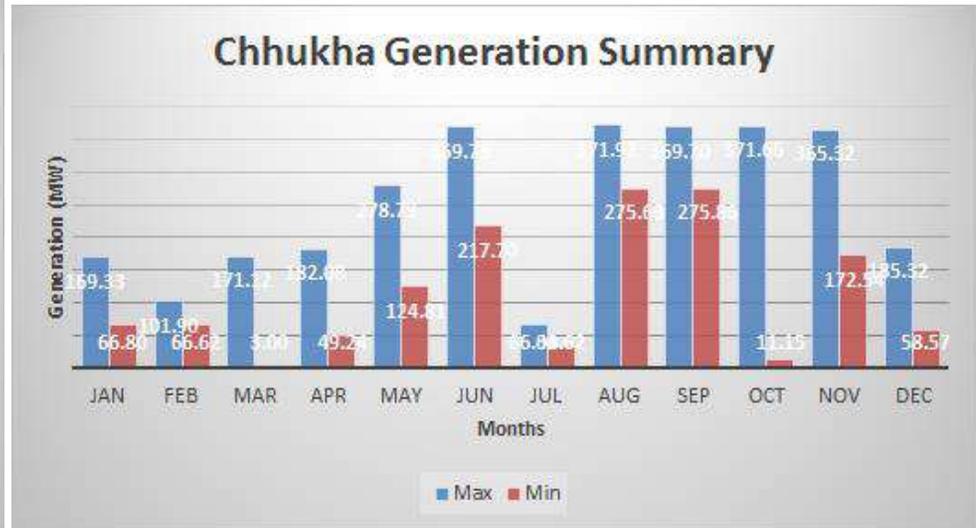
Table: 2.1.1 Monthly maximum and minimum generation summary

Sl. No	Hydropower Plant	Monthly Maximum and Minimum Generation (MW)												Max/Min of year (MW)		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	BHP	Max	25.50	19.43	26.44	21.83	65.84	65.79	66.22	66.55	66.63	66.34	59.91	50.02	66.63	
		Min	6.54	14.81	2.93	4.41	4.12	0.00	24.51	2.24	0.00	47.05	4.15	8.47		0.00
2	CHP	Max	169.33	101.90	171.12	182.08	278.79	369.79	66.00	371.92	369.70	371.66	365.32	185.32	371.92	
		Min	66.80	66.62	3.00	49.24	124.81	217.70	31.62	275.68	275.86	11.15	172.54	58.57		3.00
3	THP	Max	270.00	320.00	300.00	263.81	1,122.00	1,122.00	1,122.00	1,122.00	1,122.00	1,122.00	750.00	440.00	1,122.00	
		Min	130.00	70.00	60.00	27.60	270.00	430.00	360.00	100.00	100.00	280.00	240.00	130.00		27.60
4	KHP	Max	31.68	31.15	64.49	60.33	66.18	66.00	66.00	66.00	66.00	66.00	60.62	45.33	66.18	
		Min	10.13	10.11	11.09	10.08	31.58	12.67	31.62	30.23	16.50	48.26	27.97	10.46		10.08
5	DHP	Max	27.72	26.66	40.29	25.02	126.92	127.47	95.10	100.70	100.79	100.70	52.27	40.03	127.47	
		Min	19.19	1.23	9.75	11.06	17.16	0.00	5.50	1.13	40.30	48.74	31.31	23.06		0.00
6	MHP	Max	144.91	179.50	264.71	357.70	792.05	594.06	594.16	790.86	790.56	789.00	441.67	363.67	792.05	
		Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00

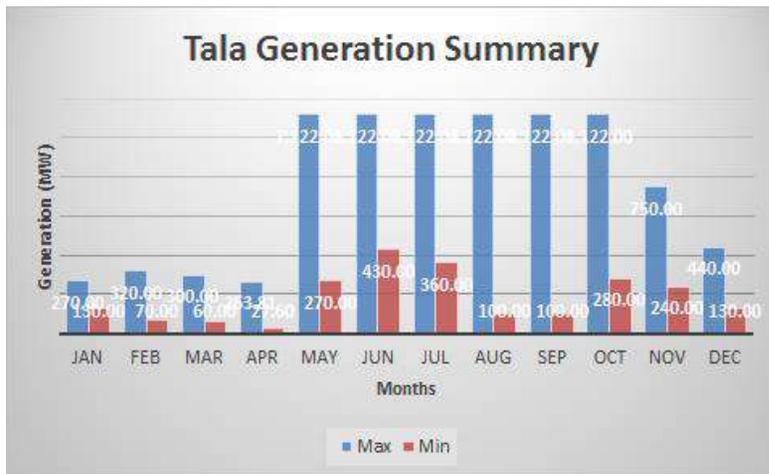
Graph: 2.1.1 Basochhu generation summary



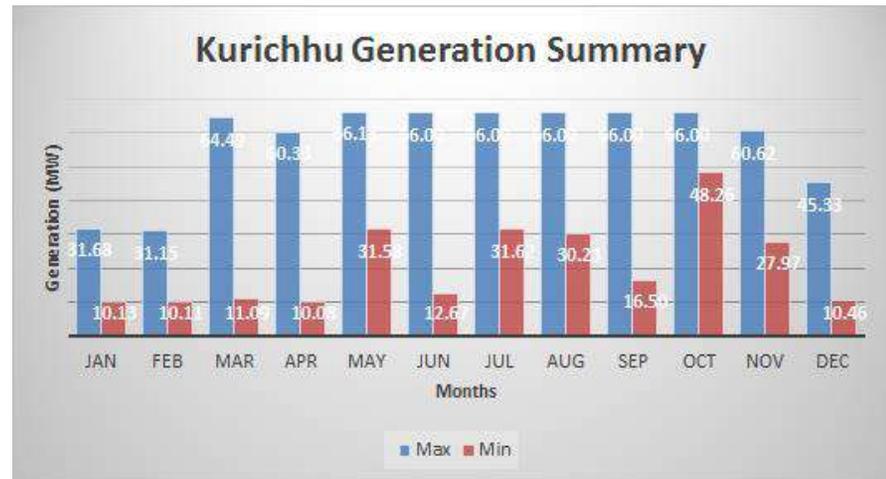
Graph: 2.1 Chhukha generation summary



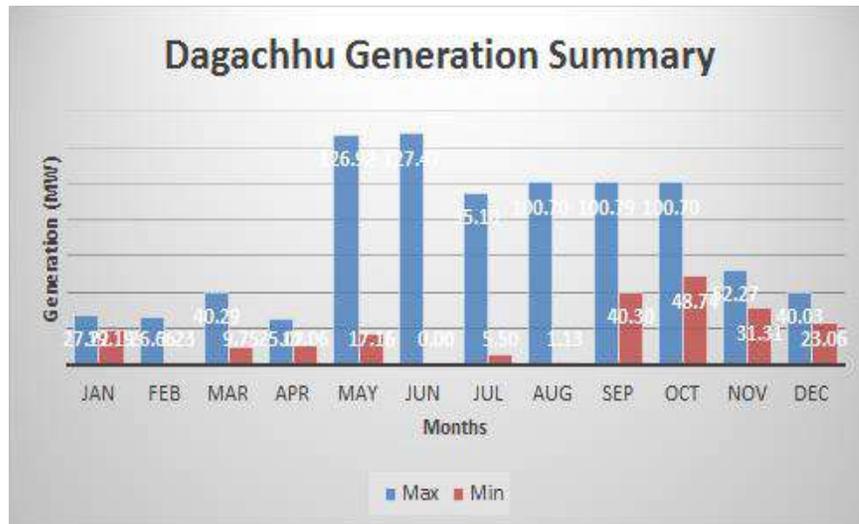
Graph: 2.1.3 Tala generation summary



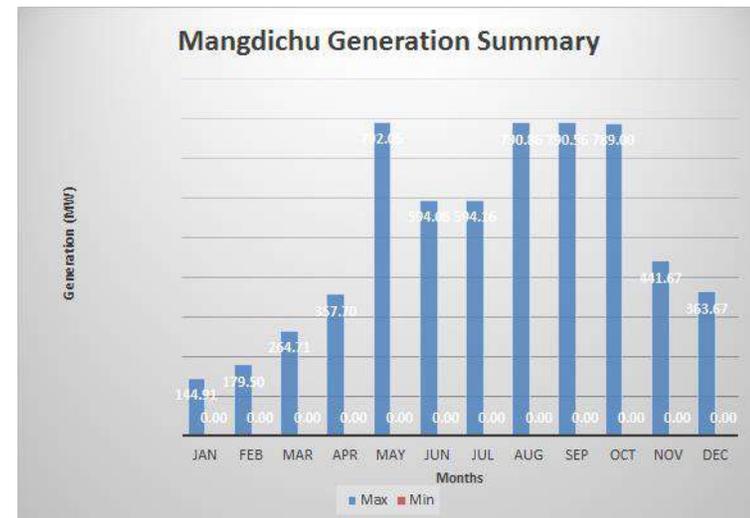
Graph: 2.1.4 Kurichhu generation summary



Graph: 2.1.5 Dagachhu generation summary



Graph: 2.1.6 Mangdichu generation summary



2.2 PLANT FACTOR

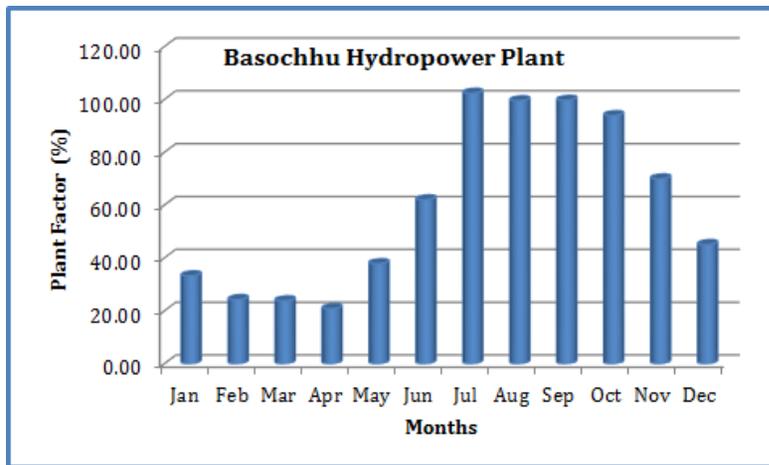
The plant factor of each generating plant was calculated as below:

$$\begin{aligned}
 \text{Plant factor} &= (\text{Actual output of a plant over a period of time}) / (\text{Output when operated at name plate rated capacity for entire time}) \\
 &= (\text{Total energy plant has produced over a period}) / (\text{Total energy plant would produce when operated at full rated capacity})
 \end{aligned}$$

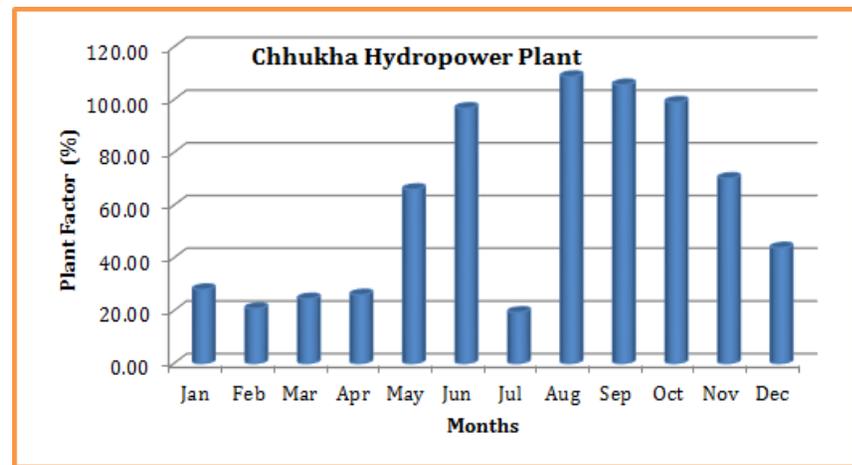
Table: 2.2.1 Monthly plant factor of the hydropower plants

Sl. No	Hydropower Plant	Monthly Plant Factor (%)												Max/Min of year	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max	Min
1	BHP	33.23	24.23	23.77	20.76	37.81	62.00	102.32	99.48	99.64	93.84	69.92	45.04	102.32	20.76
2	CHP	27.96	20.74	24.45	25.97	65.93	96.71	19.33	108.76	105.64	99.04	70.17	43.78	108.76	19.33
3	THP	18.14	14.12	16.23	13.04	56.25	82.38	78.63	96.48	87.56	78.47	45.41	28.10	96.48	13.04
4	KHP	34.63	26.87	39.37	43.86	97.93	102.30	108.23	106.79	101.73	105.07	64.16	45.25	108.23	26.87
5	DHP	18.18	13.44	13.92	11.58	32.59	56.93	93.50	86.62	81.25	64.58	44.39	28.29	93.50	11.58
6	MHP	0.00	0.12	11.92	0.00	56.25	0.00	0.00	25.68	28.08	30.75	23.93	31.55	56.25	0.00

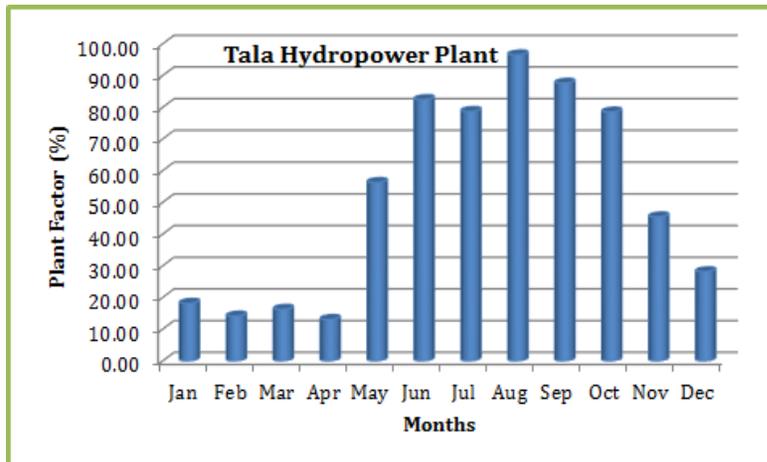
Graph: 2.2.1 Plant factor of Basochhu Hydropower Plant



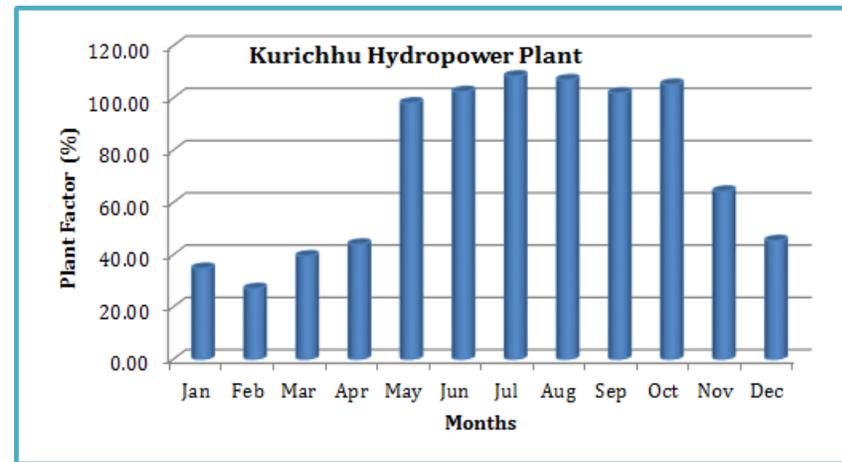
Graph: 2.2.2 Plant factor of Chhukha Hydropower Plant



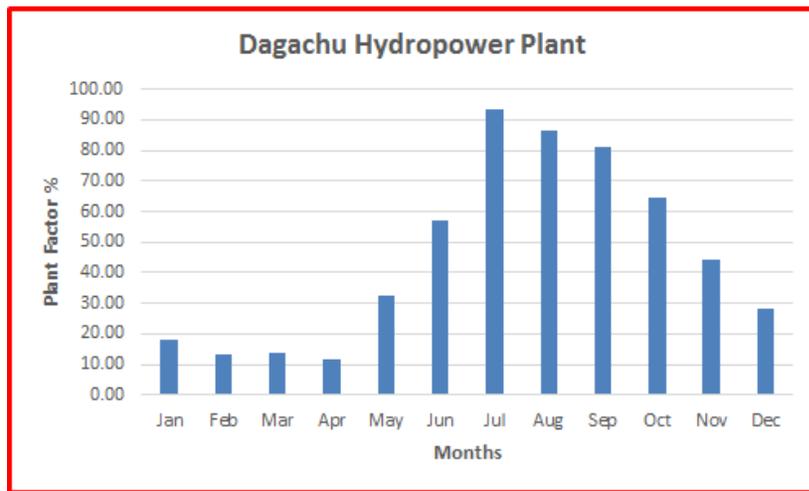
Graph: 2.2.3 Plant factor of Tala Hydropower Plant



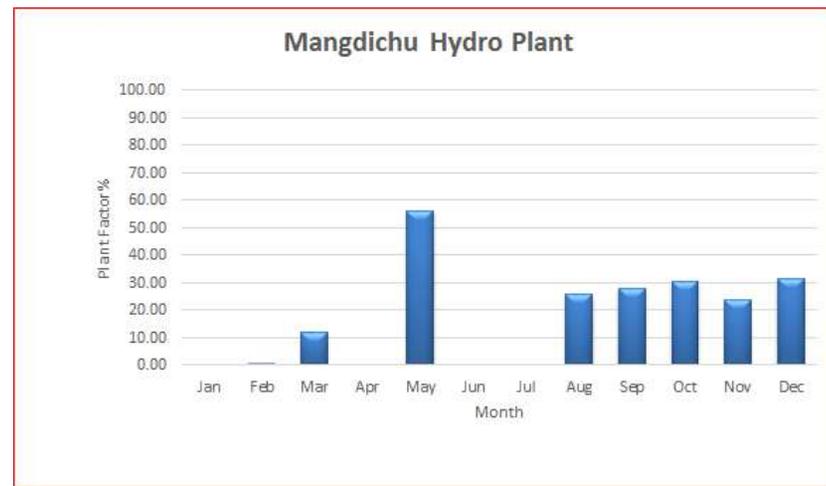
Graph: 2.2.4 Plant factor of Kurichhu Hydropower Plant



Graph: 2.2.4 Plant factor of Dagachhu Hydropower Plant



Graph: 2.2.4 Plant factor of Mangdichu Hydropower Plant



3.0 PEAK DEMAND, ENERGY AVAILABILITY AND REQUIREMENT FOR THE COUNTRY

Calculation of coincidental peak load for the eastern grid, western grid and national load, we use the following methods:

1. *National Demand = (Sum of all total generation of each plant) – (Sum of all Export/Import)*
2. *National Demand = (Sum of all feeders loading at hydropower plant) – (Sum of all Export/Import)*
3. *National Demand = (Sum of all substation loading)*

The national load calculated using method-3 is considered in the report.

3.1 NATIONAL LOAD

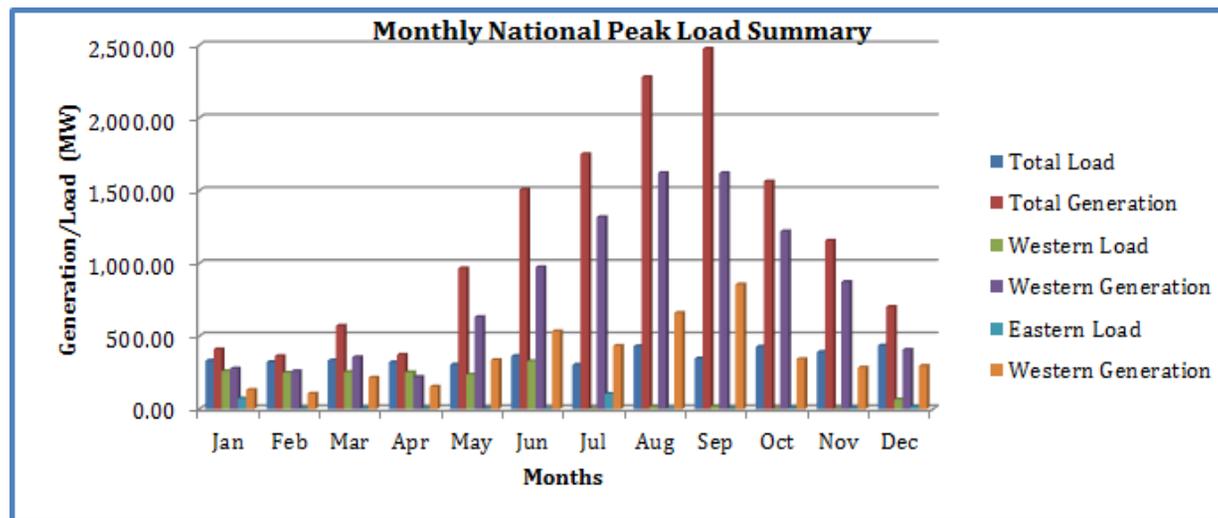
The national coincidental peak load for the year was recorded 43535 MW (Increased by 16 % compare to 2020 (374.53 MW)) on December 27, 2020 at 18:02:18 Hrs. using method-2 (sum of all feeder loading at hydropower plant minus sum of export/import). The main factor contributing towards the increase in Bhutan peak load in 2021 could be because of more production by the industries numbers of new substations came up in 2020. It had been also observed that the total sale of energy to BPC is less by about 50 MU this year compare to 2018. The table below shows the coincidental peak load summary from 2007:

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Peak Load (MW)	157.36	187.05	237.17	256.95	276.24	282.44	313.94	333.41	336.52	335.87	362.09	399.35	387.66	374.53	435.35
% Growth over previous Year	-	18.87	26.79	8.34	7.51	2.24	11.15	6.20	0.93	-0.19	7.81	10.29	-2.93	-3.39	16.24

Table: 3.1.2 Monthly national peak load and corresponding generation using method- 3

Sl. No	Months	Date	Time	Total Grid (MW)		Western Grid (MW)		Eastern Grid (MW)	
				Load	Generatio n	Load	Generatio n	Load	Generatio n
1	Jan	23-Jan-21	19:00	330.32	408.90	259.39	277.62	70.93	131.28
2	Feb	6-Feb-21	19:00	321.55	363.75	248.79	258.85	2.38	104.90
3	Mar	14-Mar-21	19:00	332.75	570.68	252.60	355.78	2.52	214.90
4	Apr	14-Feb-21	19:00	320.23	372.57	251.38	219.29	1.92	153.28
5	May	6-May-21	19:00	304.53	966.50	235.12	630.70	1.69	335.80
6	Jun	28-Jun-21	22:00	362.79	1,506.50	328.00	973.60	0.99	532.90
7	Jul	2-Jul-21	20:00	302.81	1,751.05	0.71	1,317.29	103.31	433.76
8	Aug	15-Aug-21	21:00	429.77	2,280.06	16.03	1,620.83	1.26	659.23
9	Sep	2-Sep-21	19:00	345.54	2,475.19	18.38	1,619.82	2.03	855.37
10	Oct	30-Oct-21	18:00	426.92	1,562.45	0.00	1,220.36	6.73	342.09
11	Nov	7-Oct-21	18:00	391.05	1,156.09	0.00	872.44	6.50	283.65
12	Dec	26-Dec-21	18:00	435.35	700.94	65.53	405.53	16.12	295.41
National Peak Load of the year (MW)				435.35					

Graph: 3.1.2 Monthly national peak load and corresponding generation using method- 3



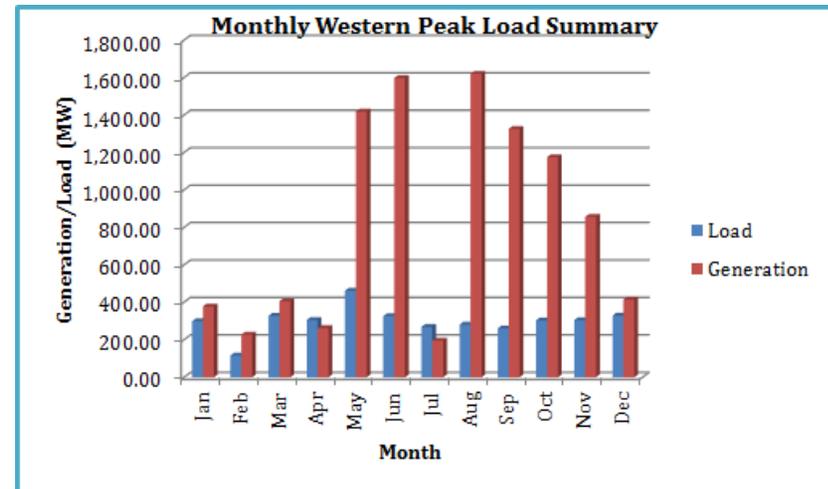
3.2 WESTERN GRID PEAK LOAD

Using method-3, the peak load for the western grid was 46251 MW which occurred on May 23, 2021.

Table: 3.2.1 Monthly western peak load and corresponding generation

Sl. No	Months	Date	Time	Western Grid (MW)	
				Load	Generation
1	Jan	4-Jan-21	19:00	299.24	378.12
2	Feb	10-Feb-21	19:00	116.08	227.77
3	Mar	4-Mar-21	19:00	328.29	406.03
4	Apr	12-Apr-21	19:00	305.60	262.65
5	May	23-May-21	21:00	462.51	1,418.90
6	Jun	19-Jun-21	11:00	326.16	1,598.14
7	Jul	22-Jul-21	6:00	269.01	195.70
8	Aug	15-Aug-21	21:00	281.43	1,620.83
9	Sep	24-Sep-21	13:00	261.28	1,326.30
10	Oct	29-Oct-21	11:00	303.81	1,174.76
11	Nov	10-Nov-21	9:00	305.34	857.05
12	Dec	19-Nov-21	22:00	329.04	414.79
Western Peak Load of the year (MW)				462.51	

Graph: 3.2.1 Monthly western peak load and corresponding generation



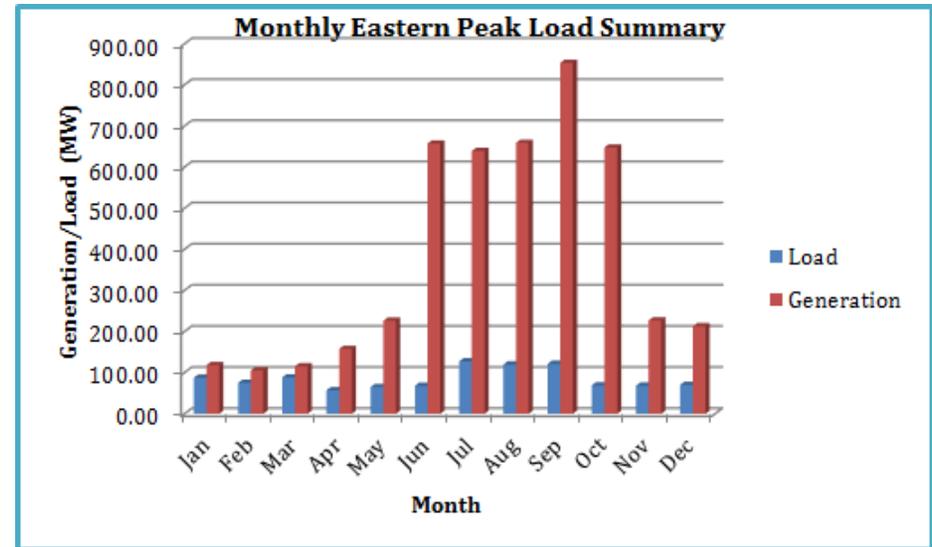
3.3 EASTERN GRID PEAK LOAD

Using method-2, the peak load for the eastern grid was 12759 which occurred on July, 2021.

Table: 3.3.1 Monthly eastern peak load and corresponding generation

Sl. No	Months	Date	Time	Eastern Grid (MW)	
				Load	Generation
1	Jan	31-Jan-21	14:00	87.73	118.31
2	Feb	5-Feb-21	19:00	75.47	105.39
3	Mar	9-Mar-21	8:00	88.62	115.66
4	Apr	21-Apr-21	19:00	57.06	157.65
5	May	3-May-21	19:00	65.04	226.39
6	Jun	13-Jun-21	7:00	68.00	657.35
7	Jul	27-Jul-21	6:00	127.59	639.17
8	Aug	17-Aug-21	4:00	119.85	659.19
9	Sep	2-Sep-21	0:00	121.56	853.38
10	Oct	21-Oct-21	5:00	69.10	647.46
11	Nov	26-Nov-21	23:00	68.60	226.97
12	Dec	1-Nov-21	4:00	70.32	212.92
Eastern Peak Load of the year (MW)				127.59	

Graph: 3.3.1 Monthly eastern peak load and corresponding generation



4.0 EXPORT AND IMPORT OF ELECTRICITY TO/FROM NEIGHBORING COUNTRIES

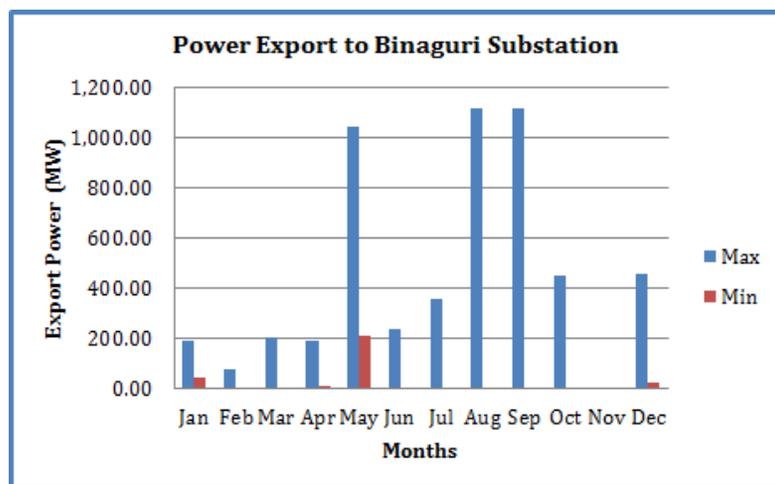
4.1 EXPORT OF ELECTRICITY TO NEIGHBORING COUNTRY

Maximum export of electricity for the year was 1,114.00MW to Binaguri substation in September, 2021, followed by 361.00MW to Birpara substation. The minimum export was 0.00 MW to Binaguri substation.

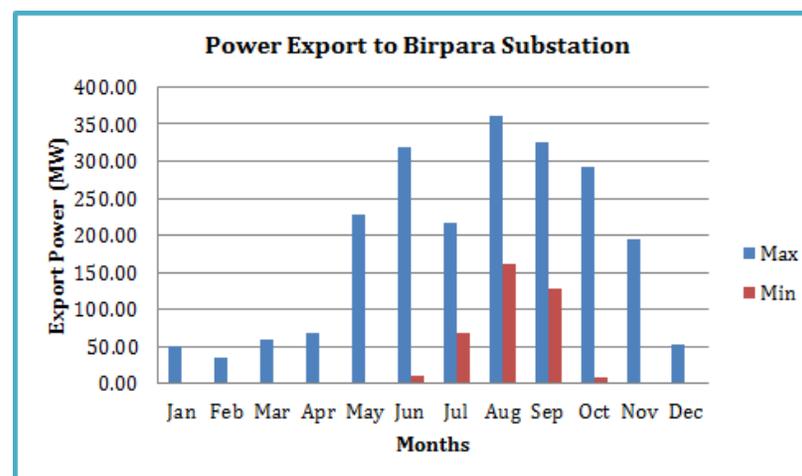
Table: 4.1.1 Monthly power export summary

Sl. No	Substation in India		Monthly Maximum and Minimum Export (MW)												Max/Min of year (MW)	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	Binaguri	Max	192.00	79.00	204.00	194.00	1,041.00	238.00	355.00	1,113.00	1,114.00	453.00	0.00	457.00	1,114.00	
		Min	41.00	1.00	1.00	11.00	211.00	1.00	0.90	1.09	1.00	1.00	0.00	21.00		0.00
2	Birpara	Max	50.40	35.30	58.40	67.40	228.47	319.50	216.89	361.00	324.80	292.87	194.73	53.31	361.00	
		Min	0.10	0.60	0.10	0.30	2.10	11.00	68.08	160.46	129.00	8.76	0.28	0.04		0.04
3	Salakoti & Rangia	Max	14.20	11.02	32.35	33.61	106.55	165.23	109.41	102.47	99.36	48.57	50.56	23.73	165.23	
		Min	1.02	0.56	0.13	0.16	0.59	16.94	29.80	9.04	7.56	0.56	0.10	0.08		0.08

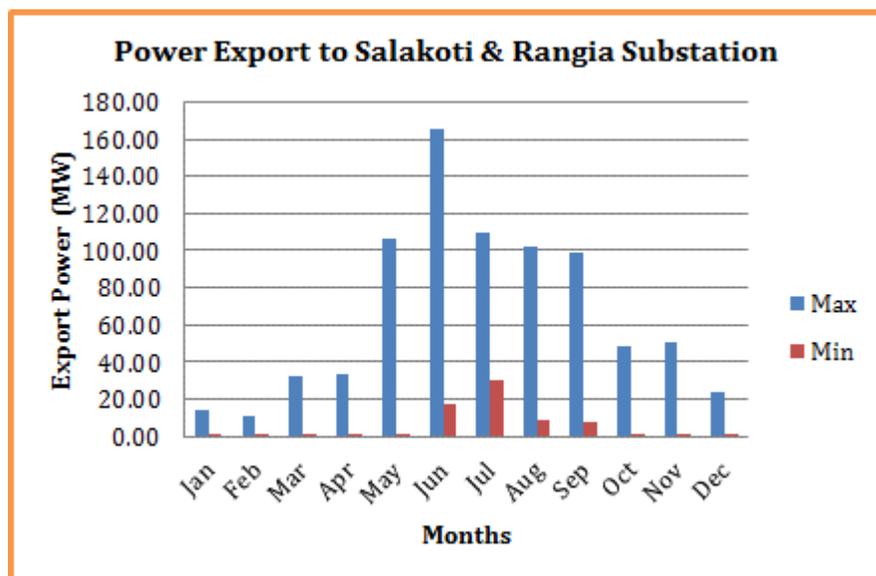
Graph: 4.1.1 Monthly power export to Binaguri substation



Graph: 4.1.2 Monthly power export to Birpara substation



Graph: 4.1.3 Monthly net power export to Salakoti and Rangia substation



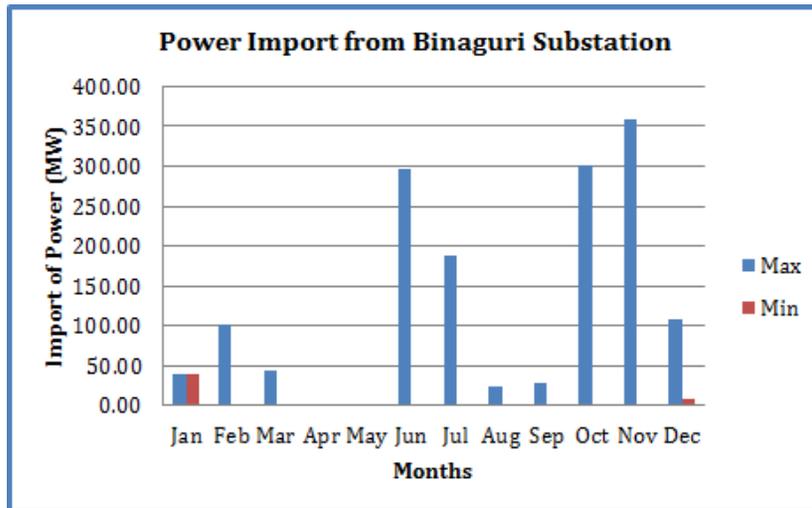
4.2 IMPORT OF ELECTRICITY FROM NEIGHBORING COUNTRY

Maximum import of power was 116.20 MW from Birpara substation which occurred in February, 2019 followed by 89.50 MW and 75 MW from Salakoti and Rangia and Binaguri respectively.

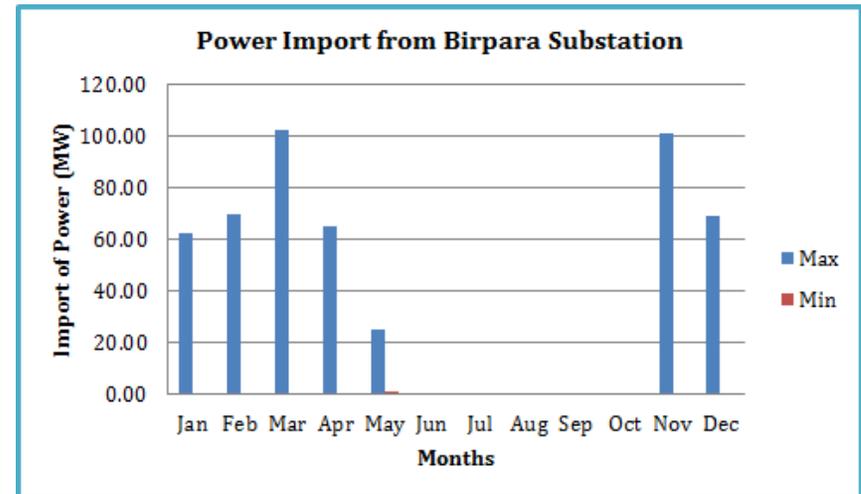
Table: 4.2.1 Monthly power import summary

Sl. No	Substation in India		Monthly Maximum and Minimum Import (MW)												Max/Min of year (MW)	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	Binaguri	Max	40.00	101.00	43.00	0.00	0.00	297.00	188.00	23.00	27.00	300.00	358.00	108.00	358.00	
		Min	40.00	2.00	1.00	0.00	0.00	1.00	0.30	0.36	2.00	1.00	2.00	9.00	0.00	0.00
2	Birpara	Max	62.40	70.00	102.23	65.02	25.30	0.00	0.00	0.00	0.00	0.00	100.90	69.18	102.23	
		Min	0.30	0.05	0.40	0.03	1.20	0.00	0.00	0.00	0.00	0.00	0.38	0.04	0.00	0.00
3	Salakoti & Rangia	Max	64.05	54.90	54.22	45.50	29.03	18.03	0.00	0.00	1.16	0.00	4.00	17.20	64.05	
		Min	0.19	1.50	0.07	0.03	0.17	18.03	0.00	0.00	0.26	0.00	1.53	0.03	0.00	0.00

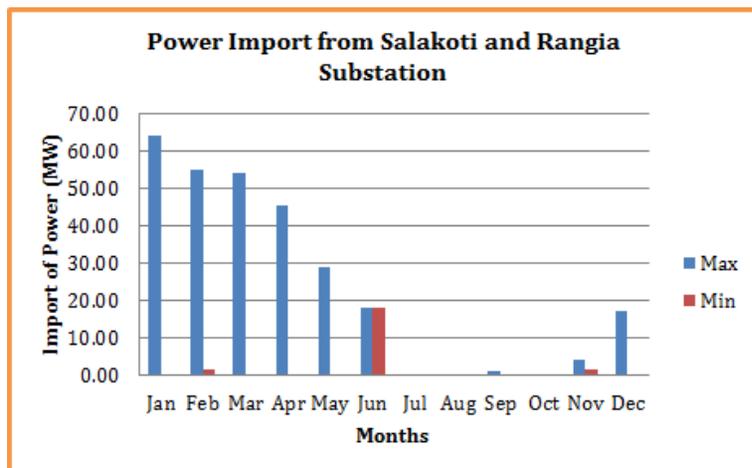
Graph: 4.2.1 Power import from Binaguri substation summary



Graph: 4.2.2 Power import from Birpara substation summary



Graph: 4.2.3 Power import from Salakoti and Rangia substation summary



5.0 FREQUENCY PROFILE: MAXIMUM AND MINIMUM FREQUENCY RECORDED AND THE FREQUENCY DURATION IN DIFFERENT FREQUENCY BANDS

As per the Grid Code Regulation 2008, Clause 6.4.1 the transmission system frequency was classified into three different bands as follows:

1. *Normal state*
The transmission system frequency is within the limit of 49.5Hz to 50.5Hz
2. *Alert state*
The transmission system frequency is beyond the normal operating limit but within 49.0Hz to 51.0Hz
3. *Emergency state*
There is generation deficiency and frequency is below 49.0Hz.

We base our frequency at 220kV Bus frequency at 220/66/11kV Semtokha substation in the western grid and 132kV Bus frequency at 50Hz and Kurichhu Hydropower Plant in the eastern grid.

Table: 5.0.1 Frequency profile at Semtokha substation

220/66/11kV Semtokha Substation					
Sl. No	Months	220kV Bus Frequency Operation State (%)			
		Normal	Alert	Emergency	Blackout/Other
1	Jan	100.00	0.00	0.00	0.00
2	Feb	100.00	0.00	0.00	0.00
3	Mar	100.00	0.00	0.00	0.00
4	Apr	96.51	0.13	0.00	3.36
5	May	100.00	0.00	0.00	0.00
6	Jun	100.00	0.00	0.00	0.00
7	Jul	100.00	0.00	0.00	0.00
8	Aug	99.23	0.00	0.00	0.00
9	Sep	96.51	0.13	0.00	3.36
10	Oct	100.00	0.00	0.00	0.00
11	Nov	100.00	0.00	0.00	0.00
12	Dec	0.00	0.00	0.00	0.00
Operation State for the year		91.02%	0.02%	0.00%	0.56%

Graph: 5.0.1 Frequency profile at Semtokha substation

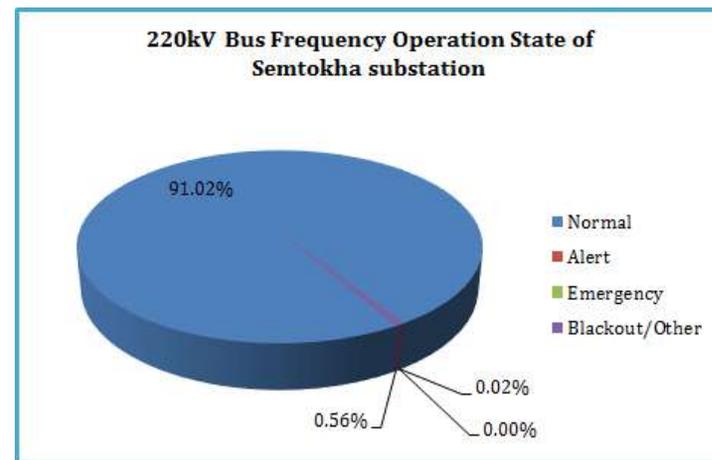
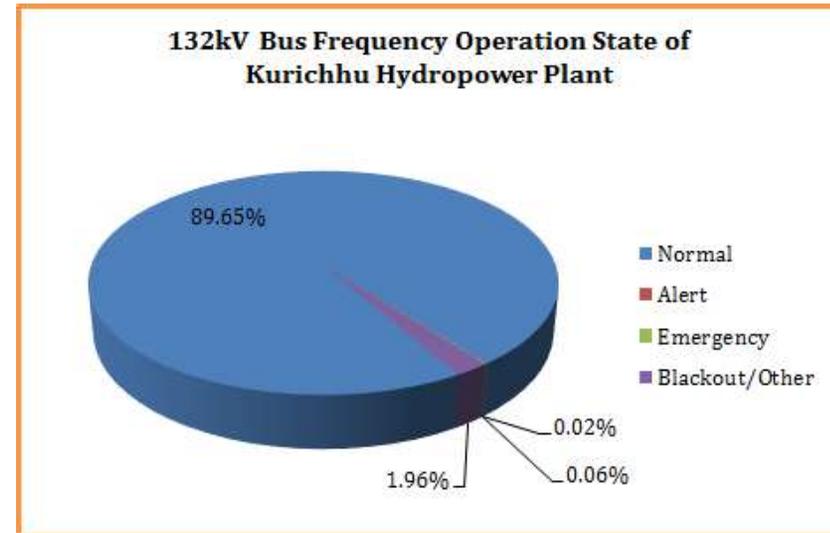


Table: 5.0.2 Frequency profile at Kurichhu Hydropower plant

Sl. No	Months	132kV Bus Frequency Operation State (%)			
		Normal	Alert	Emergency	Blackout/Other
1	Jan	99.87	0.13	0.00	0.00
2	Feb	90.32	0.00	0.00	9.68
3	Mar	99.60	0.00	0.27	0.13
4	Apr	96.37	0.00	0.00	3.63
5	May	100.00	0.00	0.00	0.00
6	Jun	96.77	0.00	0.00	3.23
7	Jul	100.00	0.00	0.00	0.00
8	Aug	100.00	0.00	0.13	0.00
9	Sep	96.77	0.00	0.00	3.23
10	Oct	99.73	0.00	0.13	0.13
11	Nov	96.37	0.13	0.13	3.36
12	Dec	0.00	0.00	0.00	0.13
Operation State for the year		89.65%	0.02%	0.06%	1.96%

Graph: 5.0.2 Frequency profile at Kurichhu Hydropower Plant



6.0 VOLTAGE PROFILE OF SELECTED SUBSTATIONS

As the Grid Code Regulation 2008, Clause 6.4.1, the voltage at all connection points was classified into three different bands as follows:

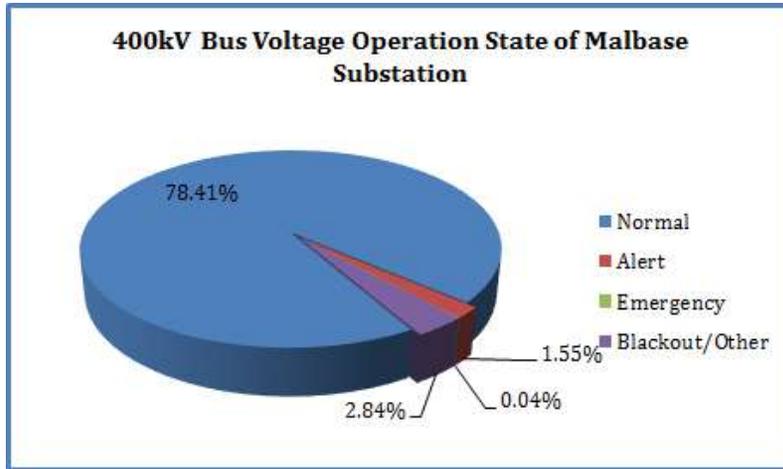
1. *Normal state*
The voltages at all connection point are within the limits of 0.95 times and 1.05 times of the normal values
2. *Alert state*
The voltage at all connection points are outside the normal limit but within the limits of 0.9 times and 1.1 times of the normal values
3. *Emergency state*
Transmission system voltages are outside the limits of 0.9 times and 1.1 times of nominal values.

The voltage profile of 400/220/66/11kV Malbase substation in western grid and 132/33/11kV Nangkhon substation in the eastern grid are considered in the report.

Table: 6.0.1 Voltage profile at Malbase substation

400/220/66/11kV Malbase Substation									
Sl. No	Months	400kV Bus Voltage Operation State (%)				220kV Bus Voltage Operation State (%)			
		Normal	Alert	Emergency	Blackout/Other	Normal	Alert	Emergency	Blackout/Other
1	Jan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Feb	89.78	0.54	0.00	9.68	90.05	0.00	0.27	9.68
3	Mar	98.39	1.61	0.00	0.00	100.00	0.00	0.00	0.00
4	Apr	96.10	0.27	0.00	3.63	92.07	4.44	0.00	3.49
5	May	100.00	0.00	0.00	0.00	99.87	0.13	0.00	0.00
6	Jun	96.77	0.00	0.00	3.23	96.51	0.27	0.00	3.23
7	Jul	98.12	1.61	0.27	0.00	100.00	0.00	0.00	0.00
8	Aug	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
9	Sep	96.77	0.00	0.00	3.23	96.77	0.00	0.00	3.23
10	Oct	100.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00
11	Nov	70.97	14.52	0.27	14.25	96.77	0.00	0.00	3.23
12	Dec	93.95	0.00	0.00	0.06	100.00	0.00	0.00	0.00
Operation State for year		78.41%	1.55%	0.04%	2.84%	89.34%	0.40%	0.02%	1.90%

Graph: 6.0.1 Voltage profile at Malbase substation at 400kV bus



Graph: 6.0.2 Voltage profile at Malbase substation at 220kV bus

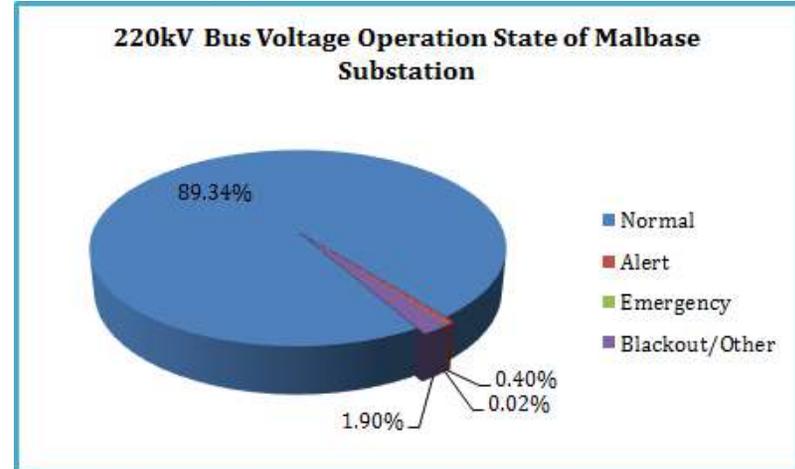
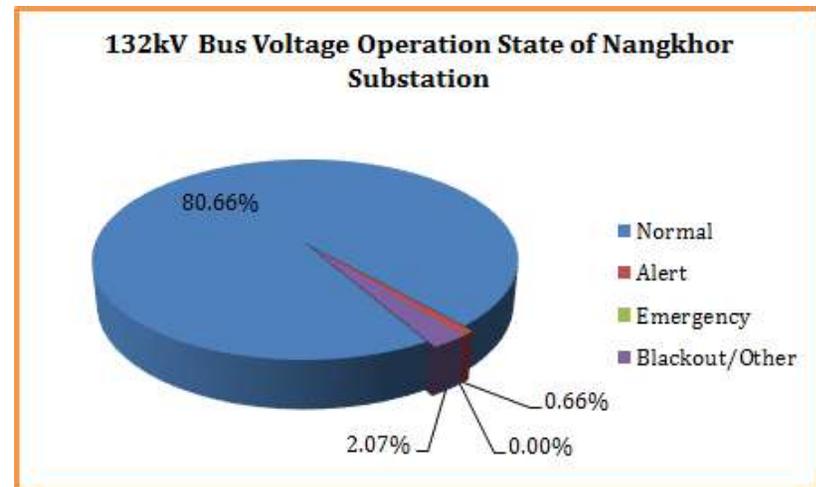


Table: 6.0.2 Voltage profile at Nangkhon substation

Sl. No	Months	132kV Bus Voltage Operation State (%)			
		Normal	Alert	Emergency	Blackout/Other
1	Jan	100.00	0.00	0.00	0.00
2	Feb	90.32	0.00	0.00	9.68
3	Mar	99.33	0.00	0.00	0.67
4	Apr	94.89	4.97	0.00	0.13
5	May	97.18	2.82	0.00	0.00
6	Jun	96.77	0.00	0.00	3.23
7	Jul	100.00	0.00	0.00	0.00
8	Aug	0.00	0.00	0.00	0.67
9	Sep	92.74	0.13	0.00	7.12
10	Oct	99.87	0.00	0.00	0.13
11	Nov	96.77	0.00	0.00	3.23
12	Dec	0.00	0.00	0.00	0.00
Operation State for year		80.66%	0.66%	0.00%	2.07%

Graph: 6.0.3 Voltage profile at Nangkhon substation



7.0 MAJOR GENERATING AND TRANSMISSION OUTAGE

The summary of the major transmission outages for the eastern grid and western grid are attached as Annexure- I and Annexure- II respectively.

The outages of transmission line or transformer or any power system equipment below 66kV, tripping/outage of less than 30minutes and planned shutdown which do not cause supply interruption to the customers are not reflected.

8.0 TRANSMISSION CONSTRAINTS

There are no instant of transmission constraints during normal condition in Bhutan Power System.

9.0 INSTANCES OF PERSISTENT OR SIGNIFICANT NON-COMPLIANCE WITHIN THE GRID CODE REGULATION

The instance of non-compliance with the Grid Code Regulation 2008 for the year 2019 was not recorded.

**Eastern Grid Outages
January 2021**

Tripping Report for the of month January, 2021 under SMD Deothang Substation,TD.BPC													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	MU Lost during outages	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Remarks
1.132/33/11kV KUBhar Substation													
132kV Feeder													
1	NO TRIPPING												
2. 132/33/11kV Kanglung Substation													
132kV Feeder(No Tripping)													
3. 132/33/11kV Deothang Substation													
132kV Feeder													
1	25.01.2021	8:30	25.01.2021	17:20	8	11.916		132kV Motonga	Motanga Line	NA	Nil	DR fdr between Deothang-Matonga	As per Approved order REF/MSG No.10A/BPC/BPSO/PSOD/Vol-1/2021/09, dated 21/01.2021. Code No 0050 by Madham Tshering Yangzom, BPSO, Thimphu dated 25.01.2021.(Breaker, both isolator open and Earth switch closed done).Charge the fdr with closing code:1189(Tshering Yangzom BPSO) and found normal.
2	26.01.2021	8:30	26.01.2021	14:43	6	9.11		132kV Motonga	Motanga Line	NA	Nil	DR fdr between Deothang-Matonga	As per Approved order REF/MSG No.10A/BPC/BPSO/PSOD/Vol-1/2021/09, dated 21/01.2021. Code No 0054 by Miss Tshering Choden, BPSO, Thimphu dated 26.01.2021.(Breaker, both isolator open and Earth switch closed done).Charge the fdr with closing code:1191(Karma BPSO) and found normal.
3	27.01.2021	8:10	27.01.2021	15:19	7	6.948		132kV Motonga	Motanga Line	NA	Nil	DR fdr between Deothang-Matonga	As per Approved order REF/MSG No.10A/BPC/BPSO/PSOD/Vol-1/2021/09, dated 21/01.2021. Code No 0059 by Miss Tshering Choden, BPSO, Thimphu dated 27.01.2021.(Breaker, both isolator open and Earth switch closed done).Fdr charged with closing code 1198..Yshering Choden BPSO,,fdr found normal
4. 132/33/11kV Nangkor substation													
132kV Feeder													
1	16.01.2021	07:19hrs	16.01.2021	07:23hrs	0	0.35		5MVA TrF-II,132/33KV	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A,51A,50C,51C & tripping relay 86 operated.	Nangkor Substation	Tripped while test charging 33kV Wanrong Feeder.
2	26.01.2021	14:10 hrs	26.01.2021	16:02 hrs	1	2.34		Nangkor-Nganglam	Nangkor-Nganglam line	NA	-	Nganglam Sunstation	Y phase Disc Insulator decapped/punctured at Nganglam Substation. Closed the CB with closing code-1193 from BPSO, Thimphu.
5. 132/33/11kV Nganglam substation													
NO TRIPPING													
1	26.01.2021	14:14	26.01.2021	16:03	1	-2.15		Nangkor-Nganglam	Nangkor-Nganglam	Suspension Insulator for Y-Phase got Punctured and Jumper got Touch with Structure	NA	Substation	Y-Phase Suspension Insulator got Punctured and Jumper has touched with tower Structure so Emergency CB hand trip was done to avoid any other damages to Line/equipments and informed to BPSO regarding the matter. Supply was restored after replacing of broken Insulator with Switch ON code# 1193 issued by Miss. Tshering Yangzom, BPSO
1	21.12.2020	14:39	21.12.2020	15:14	0	-7.2		Gel-Sal	non	Temporary fault	ip,YB-Ph.Zone -1,dia	Salakati line	

February 2021

Tripping Report for the of month February, 2021 under SMD Deothang, TD,BPC												
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Remarks
2. 132/33/11kV Kanglung Substation												
132kV Feeder(No Tripping)												
1	07.02.2021	16:02	07.02.2021	18:10	2.00	2.232	Phuntshothang	Phuntshothang	Breaker failure	Distance relay oppt.	Kanglung ss	Testcharge done once but tripping with same fault due to breaker problem, but supply was feeded through transfer bus.Charging code 1267.Again main breaker charging code 1268.Transfer bus opening code 0117.
4. 132/33/11kV Nangkor substation												
132kV Feeder												
1	03.02.2021	15:08 hrs	03.02.2021	16:44 hrs	1	0.44	132/33kV, 5MVA Trf-I	132/33kV, 5MVA Trf-I	NA	-	Nangkor Substation	Emergency shut down taken by Substation incharge to attend oil leakage. No supply was interrupted.
2	25.02.2021	13:20 hrs	25.02.2021	13:41 hrs	0	0.45	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	Tripped on fault	Non directional IDMT O/C-50A,51A, 50C, 51C & tripping relay 86 operated	Nangkor Substation	Tripped due to fault on 33kV Yurung feeder.
3	25.02.2021	13:20 hrs	25.02.2021	13:41 hrs	0	0.27	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Tripped on fault	Non directional IDMT O/C-50A,51A, 51C, & tripping relay 86 operated	Nangkor Substation	Tripped due to fault on 33kV Yurung feeder.
5. 132/33/11kV Nganglam substation												
132kV Feeder												
1	28.02.2021	19:19	28.02.2021	19:21	0	1.66	5MVA Transformer	5MVA Transformer	Over Current/Earth Fault	O/C & E/F 86optd	33kV Dechenling feeder	Tripped due to 33kV Dechenling feeder fault
6. 132kV Motanga substation												
1	2/1/2021	14:23 hrs	2/1/2021	14:26 hrs	-	0.05	15MVA xmer-1	-	Tripped on Fault	86A optd	Motanga ss	CB tripped while charging of transformer at Azista end informed BPSO and charged transformer at 14:26hrs from our end.
2	2/1/2021	16:00 hrs	2/7/2021	16:10hrs	-	-8.5	Deothang fdr incomer	-	Tripped on Fault	86A & 86B OPTD,OC/EF at oue end	Motanga ss	Informed BPSO,with code no.1260 CB closed at 16:10hrs from our end.
3	2/7/2021	16:00 hrs	2/7/2021	16:26hrs	-	-15.39	Motanga-Rangia fdr	-	Tripped on fault	86A & 86B OPTD,OC/EF at oue end	Motanga ss	Informed BPSO,with code no.NLDC Bnt.1262,NLDC India 702,NERLDC 7644 CB closed at 16:26hrs from our end.
4	2/7/2021	16:00 hrs	2/7/2021	17:12hrs	1	-1.68	Motanga-Phuntshothang fdr	-	Tripped on Fault	86A & 86B OPTD,OC/EF at oue end	Motanga ss	informed BPSO,with code no.1265 CB closed at 17:12hrm from our end.
1. 400/220/132/33kV Jigmeling Substation												
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Remarks
i) 400kV												
1	08.02.2021	14:37hrs	08.02.2021	14:46hrs	0	101.08	MHPA line 2	Alipurduar SS	Line-Earth Fault	Main-1 = R,Y&Bph -Ground Pickup and DTT trip Main-2 = R,Y&Bph pick up	Main-1 - 82.8km Main 2 - 82.3km	
2	14.02.2021	11:19 hrs	14.02.2021	12:56 hrs	1		Aliper CKTI	Alipurduar SS	Line-Earth Fault	RYB phase pick up, DTT Tripped		
3	20.02.2021	14:06 hrs	20.02.2021	14:24 hrs	0	93.96	MHPA line 3	Alipurduar SS	Line-Earth Fault	Main-1 = Rph pickup, DTT trip, 2 = Rph pick up	Main-1 = 78.8km Main 2 = 77.8km	
ii) 220 kv and 132 kV												
1	28.02.2021	5:09:03hrs	28.02.2021	5:32:18hrs	0	9.79	Tsirang-Jigmeling	Dhajay and Jigmeling substation	phase to phase fault	Main-4 Rph=2.021KA, Yph=2.032KA, Bph=0.04KA, and Main-II Rph=2055.86ph, Yph=2032.70KA, Bph=36.27KA, FOR BOTH ZONE-I(Z1) OPTD.	Main-I=4.1KM, Main-II=3.41KM	breaker at our end is closed first then only breaker at jigmeling end is closed.

Tripping Report for the of month March, 2021 under SMD Deothang, TD,BPC

Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Remarks
3. 132/33/11kV Deothang Substation												
132kV Feeder												
1	1.03.2020	15:01	1.03.2020	15:33	0	17.28	132kV Deothang-Nangkhon	Deothang-Nangkhon line	NA	Nil	Nangkor s/s	Incomer tripped with opening code 0229 & breaker closed closing code 1272 by Tshering Choki
2	6.03.2021	12:58	06.03.2021	13:11	0	8.028	132kV Deothang-Nangkhon	Deothang-Nangkhon	NA	Nil	Unknown	Grid fail, at our end all breaker are in normal condition .at 13:11 supply resumed from Motonga SS. Deothang breaker kept opened at Deothang substation.
3	6.03.2021	12:58	06.03.2021	13:11	0	8.028	132kV Deothang-Motonga	Deothang-Motonga	NA	Nil	Unknown	Grid fail, at our end all breaker are in normal condition .at 13:11 supply resumed from Motonga SS.
4	06.03.2021	12:58	06.03.2021	16:24	3	-9.252	132kV Deothang-Nangkhon	Deothang-Nangkhon	33/11kV 2.5MVA Transformer blast	NA	Nangkor s/s	Emergency shut down taken by Nangkor S/S since both 33/11kV 2.5MVA Transformer got blast. Aailed through phone by BPSO and Nangkor substation Head.
5	30.03.2021	20:22	30.03.2021	20:25	0	26.49	132 kV Deothang-Motonga	Deothang-Motonga	NA	Nil		Emergency shut down by BPSO Tshering Yangzom opening code 0334 due to low Voltage system in estren grid. Cahrged vit closing code 1901 BPSO Jangchub
4. 132/33/11kV Nangkor substation												
132kV Feeder												
1	05.03.2021	18:43 hrs	05.03.2021	19:09 hrs	0	1.13	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A/50C & tripping relay 86 operated	Nangkor Substation	Tripped while test charging 33kV Namung feeder
2	05.03.2021	18:43 hrs	05.03.2021	18:48 hrs	0	0.85	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A/50C & tripping relay 86 operated	Nangkor Substation	Tripped while test charging 33kV Namung feeder
3	06.03.2021	12:56 hrs	06.03.2021	16:25 hrs	3	-7.89	Nangkor-Ngnglam	Nangkor-Ngnglam line	NA	-	Nangkor Substation	Emergency hand trip requested from our end and same was informed to BPSO, Thimphu. Due to 2.5MVA Transformer fire incident
4	06.03.2021	12:57 hrs	06.03.2021	16:36 hrs	3	-4.89	Kurichu-Nangkor	Kurichu-Nangkor line	NA	-	Nangkor Substation	Emergency hand trip requested from our end and same was informed to BPSO, Thimphu. Due to 2.5MVA Transformer fire incident
5	06.03.2021	12:58 hrs	06.03.2021	16:24 hrs	3	11.94	Nangkor-Deothang	Nangkor-Deothang line	NA	-	Nangkor Substation	Emergency hand trip requested from our end and same was informed to BPSO, Thimphu. Due to 2.5MVA Transformer fire incident
6	06.03.2021	12:50 hrs	08.03.2021	16:23 hrs	51	0.21	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	NA		Nangkor Substation	Due to 2.5MVA Transformer fire incident
7	06.03.2021	12:50 hrs	08.03.2021	14:35 hrs	49	0.85	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	NA		Nangkor Substation	Due to 2.5MVA Transformer fire incident
5. 132/33/11kV Ngnglam substation												
132kV Feeder												
1	02.03.2021	14:30	02.03.2021	14:35	0	0.58	3MVA transformer-II	3MVA transformer-II	Over current	O/C 86opted	Dechenling Feeder	Trip due to 33kV Dechenling feeder fault
2	05.03.2021	16:42	05.03.2021	16:45	0	0.856	3MVA transformer-II	3MVA transformer-II	Over current	O/C 86opted	Dechenling Feeder	Trip due to 33kV Dechenling feeder fault
3	06.03.2021	12:52	06.03.2021	16:25	3	11.19	Nangkor-Ngnglam	Nangkor-Ngnglam	Earth Fault	E/F opted, 86 optd	Nangkor-Ngnglam	Fault Value: I _A =180.0A, I _B =191.1A, I _C =835.97A, I _Σ =579.4A, VAN=65.28kV, V _{BN} =65.38kV, V _{CN} =19.26kV. The feeder was normalised as per the SMDL ON code# 1292 convey by SMDL Tshering Yangzom, BPSO Thimphu
33kV Feeder												
6. 132kV Motonga substation												
1	3/6/2021	12:58 hrs	3/6/2021	13:10 hrs	-	-18.83	Deothang fdr incomer	-	Tripped on Fault	86A & 86B OPTD,OC/EF at our end	Motanga ss	informed BPSO, as per there instruction CB closed at 13:10hrs from our end.
2	3/15/2021	05:43 hrs	3/15/2021	05:48hrs	-	0.05	15MVA Xmer	-	Tripped on Fault	O/C at our end	Motanga ss	CB closed at 5:48hrs from our end.
3	3/15/2021	14:49 hrs	3/15/2021	15:28hrs	-	0	33kV Adista	-	Hand tripped	-	Motanga ss	Taken shut down by DSD for maintenance work at Adista end.
4	3/30/2021	23:36hrs	3/30/2021	23:39hrs	-	8.81	Motanga-Ranga fdr	-	Tripped on Fault	86A & 86B OPTD,OC/EF at our end	Motanga ss	informed BPSO, as per there instruction CB closed at 23:55hrs with code NLDC Bht 1908, NLDC India 2137 and NER-ELDC-11175 from our end.
1. 400/220/132/33kV Jigmeling Substation												
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Remarks
i) 400kV												
1	44276	12:12 hrs	44276	12:22 hrs	0 hrs	138.17 MW	MHPA Line 4	Alipurdwar substation	DTT trip while opening line Alipur Ckt 2 at their end	DTT trip		
4. 132/33/11kV Timbi Substation												
i) 66 kV and Above												
1.00	44261.00	0.54	44261.00	0.55	0.00	23.76	132kV Tingtibi-Nanglam	132kV Tingtibi-Nanglam	Temporary fault	Distance Protection Relay-Trip phase ABC, Fault Location:119.4KM, Fault Zone=3.	132kV Tingtibi-Nanglam	

Tripping Report for the of month April, 2021 under SMD Deothang, TD,BPC													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
1.132/33/11kV KUBhar Substation													
132kV Feeder													
	30.04.2021	16:59	30.04.2021	17:06		-13.75	132kv kurichu	All feeders	NA	Nil	kurichu end	trip	Line tripped from kurichu end. all unit are trip due to under voltage.
2. 132/33/11kV Kanglung Substation													
132kV Feeder													
1	01.04.2021	14:30	1.4.2021	14:34	0:04	-7.182	Corlung	Kanglung	E/F	E/F	Corlung Line	Tripped on fault	Line Tripped due to Lightning
2	07.04.2021	21:14	07.04.2021	21:17	0:00	-12.168	Corlung	kanglung	O/c	o/c	Corlung Line	Tripped on fault	line tripped due to over current at our end ,due to heavy rainfall with thundering &lightning
3	28.04.2021	17:03	28.04.2021	17:13	0:00	-11.412	Corlung	kanglung	O/C & E/F	O/C & E/F relay operated Ir-27.56A, ly-801.8A, Ib-720.2A. Distance relay operated with Zone 1, at 17.88KM	Corlung Line	Tripped on fault	fdr normalised after getting clearance from ms. Karma, (engg). BPSO. At 17:13 hrs.
4	28.04.2022	17:03	28.04.2021	17:14	0:00	9.756	Phuntshothang	Kanglung	NA	nce relay zone 1 ope	Phuntshothang line	Tripped on fault	fdr normalised after getting clearance from ms. Karma, (engg). BPSO. At 17:14hrs.
5	28.04.2021	17:43	28.04.2021	17:45	0:00	-11.412	Corlung	kanglung	O/C & E/F	O/C & E/F relay operated Ir-570.8A, ly-57.85A, Ib-621A. Distance relay operated with Zone 2, at 25.71KM	Corlung Line	Tripped on fault	fdr normalised after getting clearance from ms. Karma, (engg). BPSO. At 17:45hrs.
6	28.04.2021	17:43	28.04.2021	19:56	2:00	9.756	Phmatshothang	Kanglung	NA	nce relay zone 1 ope	Phuntshothang line	Tripped on fault	fdr normalised after getting clearance from ms. Karma, (engg). BPSO with charging code 2050
7	30.04.2021	16:55	30.04.2021	17:16	0:00	-10.872	Corlung	kanglung	O/C & E/F	O/C & E/F relay operated IA-32.78A, IB-72.53A, IC-797.6A. VAB-134.1kV,VBC-81.7kV,VCA-77.9kV. Distance relay operated with Zone 1, at5.586KM,IA-32.71A,IB-72.2A,IC-822.3A,VAN-78.66kV,VBN-76.45kV,VCN-5.706kV	Corlung Line	Tripped on fault	Feeder normalised after getting clearance from BPSO.
8	30.04.2021	16:55	30.04.2021	17:16	0:00	9.486	Phuntshothang	Kanglung	NA	NA	Phuntshothang line	Tripped on fault	Feeder normalised after getting clearance from BPSO.

4. 132/33/11kV Nangkor substation													
132kV Feeder													
1	04.04.2021	18:43 hrs	04.04.2021	19:57 hrs	0	0.84	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Tsebar feeder
2	04.04.2021	18:43 hrs	04.04.2021	18:47 hrs	0	0.61	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Tsebar feeder
3	04.04.2021	19:33 hrs	04.04.2021	19:37 hrs	0	0.46	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Tsebar feeder
4	04.04.2021	20:50 hrs	04.04.2021	21:03 hrs	0	11.7	Nangkor-Deothang	Nangkor-Deothang line	Tripped on fault	Non directional E/F,O/C relay & tripping relay 86 operated	Nangkor-Deothang line	Tripped on fault	Start O CN, Trip O N. O/C start I>1, E/F start IN1>12, trip IN1>2. IA-60.16A, IB-52.54A,IC-404.0A, IN measured-353.5A. Informed to BPSO, and charged the feeder with instruction from BPSO.
5	10.04.2021	20:53 hrs	10.04.2021	21:06 hrs	0	35.7	Nangkor-Deothang	Nangkor-Deothang line	Tripped on fault	Non directional E/F,O/C relay & tripping relay 86 operated	Nangkor-Deothang line	Tripped on fault	Start O CN, Trip O N. O/C start I>1, E/F start IN1>12, trip IN1>2. IA-102.4A, IB-100.9A,IC-447.5A, IN measured-361.4A. Informed to BPSO, and charged the feeder with instruction from BPSO.
6	14.04.2021	04:32 hrs	14.04.2021	14:50 hrs	0	0.39	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	NA	Non directional IDMT O/C Relay-50A,50C & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Due to fault on 33kV Tsebar feeder.
7	16.04.2021	15:58 hrs	16.04.2021	16:03 hrs	0	0.42	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A,50C & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Yurung feeder
8	16.04.2021	15:58 hrs	16.04.2021	16:03 hrs	0	0.24	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A,50C & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Yurung feeder
9	22.04.2021	02:26 hrs	22.04.2021	02:40 hrs	0	0.38	132/33kV, 5MVA Trf-I	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A,50C & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Namung feeder & Namung Feeder
10	22.04.2021	02:26 hrs	22.04.2021	02:40 hrs	0	0.43	132/33kV, 5MVA Trf-II	All 33kV & 11kV feeders	Transient fault	Non directional IDMT O/C Relay-50A,50C & tripping relay 86 operated	Nangkor Substation	Tripped on fault	Tripped due to fault on 33kV Namung feeder & Namung Feeder
11	28.04.2021	00:03 hrs	28.04.2021	00:26 hrs	0	24.1	Nangkor-Deothang	Nangkor-Deothang line	Tripped on fault	Non directional O/C,E/F Relay & tripping relay 86 operated	Nangkor-Deothang line	Tripped on fault	Start O CN, Trip O N. O/C start I>1, E/F start IN1>12, trip IN1>2. IA-100.2A, IB-96.92A,IC-467.9A, IN measured-391.2A. Informed to BPSO, and charged the feeder with instruction from BPSO.
12	28.04.2021	08:23 hrs	28.04.2021	09:58 hrs	1	0.24	132/33kV, 5MVA Trf-II	132/33kV, 5MVA Trf-II	Tripped on fault	Aux-Relay Diffref 87x,64x, 30CWDG temp. Alarm, 30D Buch. Alarm & tripping relay 86 operated	Nangkor Substation	Tripped on fault	No supply interrupted. Tripped due to Shake of Earth Quake. Charged the Xmer after inspection.
13	30.04.2021	16:03 hrs	30.04.2021	16:15 hrs	0	28.6	Nangkor-Nganglam	Nangkor-Nganglam line	Tripped on fault	Directional O/C,E/F & tripping relay 86 operated	Nangkor-Nganglam line	Tripped on fault	Directional O/C & E/F & trip relay 86 operated at our end: Start phase BN, trip phase N, O/C start I>1, E/F start E/F IN1>12, trip IN1>2. IA-78.17A, IB-670A, IC-141.2A, VAB-109.8KV, VBC-107.3KV, VCA-130.5KV, VAN-72.7KV, VBN-53.08KV, VCN-74.15KV, VN-0.00, 49.98Hz,IN measured-456.0A, IN derived-455.8A. Informed to BPSO & charged the feeder as per their instruction.
14	30.04.2021	16:37 hrs	30.04.2021	17:04 hrs	0	28.6	Main Grid	All 33kV & 11kV feeders	-	-	Motonga Substation & Tintibi Substation	Tripped on fault	Supply failed from Motonga Substation and Tintibi Substation and received from Motonga Substation.

6. 132kV Motanga substation													
1	4/4/2021	20:53 hrs	4/4/2021	20:58 hrs	-	-10.5	Deothang fdr incomer	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Informed BPSO,as per there instruction by Karma Yangzom without closing code CB closed at 20:58hrs from our end as emergency.
2	4/8/2021	10:15 hrs	4/8/2021	13:52hrs	3	0.1	15MVA Xmer	-	Hand tripped	-	Motanga ss	-	Informed BPSO and CB closed at 13:52hrs from our end.
3	4/10/2021	20:52 hrs	4/10/2021	21:01hrs	-	-34.5	Deothang fdr incomer	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Taken shutdown by DCSD for maintenance work at Azista end.
4	4/11/2021	08:02hrs	4/11/2021	08:40hrs	-	0.02	33kV POP Factory	-	Hand tripped	-	Motanga ss	-	Shutdown taken by DCSD S/Jongkhar to replace Fuse at there end.
5	28/04/201	08.25hrs	28/04/201	09.22hrs	-	-22.47	Deothang fdr Incomer	-	Hand tripped	-	Motanga ss	-	Informed BPSO, Thimphu as instructed to closed CB with code no.2046 CB closed from our end at 09:22hrs.Due to heavy earthquake all isolators alignment was slightly gone out and Rangia main isolator and line isolator and Phuntshothang line isolator got burnt. So firstly control the fire at isolators by hand tripping CB for Deothang,Rangia and Phuntshothang feeders and than we the staffs physically check all the structures and alignment for all bays.manually closed all isolators to confirmed fully closed and inform BPSO to charge the line.
6	28/04/201	08.25hrs	28/04/201	13.07hrs	4 hrs	6.11	Motanga-Rangia line	-	Hand tripped	-	Motanga ss	-	Informed to BPSO, Thimphu as instructed to closed CB with code no.NLDC Bht-2047,NLDC India-1349,NERLDC -1875 CB closed from our end at 13:07hrs.Due to earthquake main isolator and line isolator alignment gone out and got burnt .informed maintenance team at Deothang and done all alignment works both for Rangia and Phuntshothang isolators and both line charged from our end.
7	28/04/201	08.25hrs	28/04/201	13.26hrs	5 hrs	-8.97	tanga-Phuntshothang line	-	Hand tripped	-	Motanga ss	-	Informed BPSO , Thimphu as instructed to closed CB with code 2048 from our end at 13:26hrs. Due to earthquake isolator s got burnt and informed maintenance team and after completing alignment works only line charged from our end.
8	28/04/201	17.04hrs	28/04/201	17.16hrs	-	-8.96	tanga-Phuntshothang line	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Informed BPSO and closed the CB from our end at 17:16hrs from our end.
9	28/04/201	17.39hrs	28/04/201	17.45hrs	-	-8.96	tanga-Phuntshothang line	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Informed BPSO and closed the CB from our end at 17:45hrs from our end.
10	30/04/201	16.55hrs	30/04/201	17.04hrs	-	-26.9	Motanga-Deothang line	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Informed BPSO and closed the CB from our end at 17:04hrs from our end.
11	30/04/201	16.55hrs	30/04/201	17.05hrs	-	-6.47	tanga-Phuntshothang line	-	Tripped on Fault	86A & 86B OPTD,OC/EF at one end	Motanga ss	-	Informed BPSO and closed the CB from our end at 17:05hrs from our end.
7. 132.33 kV Corlung substation													
132kV Feeder													
1	30.04.2021	16:58 hrs	30.04.2021	17:04 hrs	0	9.57	132 Khilihar-Corlung line and 132 kV Corlung-Kanglung Line	132 Khilihar-Corlung line and 132 kV Corlung-Kanglung Line	Incoming supply fail	NA	Kurichhu Supply fail	Grid fail	At 14:58 hrs Incoming supply from khilihar substation fail amd Corlung substation was blackout but no breaker tripping has occurred at Corlung substation.
7. 132.33 kV Phuntshothang substation													
132kV Feeder													
1	1/04/2021	14:20	4/1/2021	14:47	-	7.02	Kanglung Line	Kanglung line	Zone one Distance Relay Trip for Kanglung s/s	86A and 86B	Kanglung Line	Trip	Kanglung s/s zone one distance relay trip
2	7/04/2021	21:09	4/7/2021	21:17	-	10.50	V incomer Kanglung	Kanglung Line	1OPTD (R,Y,B Phase Zone one Distance Relay Trip for Kanglung s/s	89A and 89B	Kanglung Line	Trip	Zone-1 OPTD R,Y,B Phase trip
3	28/04/2021	17:03	4/28/2021	17:24	-	9.39	KANGLUNG LINE	Kanglung Line	Zone one Distance Relay Trip for Kanglung s/s	86A and 86B	Kanglung Line	TRIP	Kanglung s/s zone one distance relay trip
4	28/04/2021	17:42	4/28/2021	19:59	2	9.39	KANGLUNG LINE	Kanglung Line	1OPTD (R,Y,B Phase zone -1OPTD(B Phase trip) and over voltage	89A and 89B	Kanglung Line	TRIP	Zone-1 OPTD R,B Phase trip
5	30-04-21	16:55	4/30/2021	17:15	-	11.03	KANGLUNG LINE	Kanglung Line	Zone -1OPTD(B Phase trip) and over voltage	89A and 89B	Kanglung Line	TRIP	Zone-1 OPTD B Phase trip(grid fail)

D) 400kV													
1	22.04.2021	12:44 hrs			0	64.1MW	MHPA Line-2	Jigmeling Substation	DTT trip. RYB phase Tripped.			Transient Fault (Lightening and thundering)	
2	30.04.2021	02:50 hrs	30.04.2021	14:57 hrs			Shunt Reactor-1		Rphase- Ground fault			Transient Fault (Lightening and thundering)	
ii) 220 kv and 132 kV													
1	10.04.2021	19:28hrs	10.04.2021	19:42hrs	0	ICT-1 36.4	80MVA ICT1 & 2	Jigmeling s/s		50N/51N Trip, (Ia=0.53kA, Ib=0kA, Ic=0 kA for ICT 1), 50N/51N Trip, (Ia=0.54kA, Ib=0kA, Ic=0 kA for ICT 2)		Transient (lightning and thundering)	Both ICT1&2 Trip at the same time.
2	22.04.2020	12:02hrs	22.04.2021	01:45hrs	0	12.99MW	Tsirang Feeder	Jigmeling s/s	Earthfault(L2-E)	50N/51N pick up, L2E phase tripped, main 1 operated, dist. 23.4km	dist. 23.4km	Transient (lightning and thundering)	
3	22.04.2021	12:23hrs	22.04.2021	12:23hrs	0	1.13MW	Dagapela Feeder	Jigmeling s/s	Line Fault	Y&Bphase tripped, zone 1 optd. Dist. 21.68km	Dist. 21.68km	Transient (lightning and thundering)	
4	30.04.2021	15:26hrs	30.04.2021	15:34hrs	0	29.33	132kV Jigmeling-Gelephu Line	Jigmeling & Tingtibi	Ground fault	main 1 = Relay General Trip and R & Y phase with ground fault trip.	Distance -65.9km	Transient	
2. 220/66/33kV Dhojay Substation													
i) 66kV and above													
1	22.04.2021	00:01:50hrs	22.04.2021	1:46:30hrs	1	13.3	Jigmeling feeder	Dhojay SS	main 1-Ia=0.47KA, II 86.1 & 2, Distance re Main 1=16.5km, Mai Tripped				whole Tsirang is black out as line couldnot extend from Jigmeling since their line
3. 132/66/33/11kV Gelephu Substation													
i) 66kV and above													
1	04.04.2021	17:22hrs	04.04.2021	18:24hrs		6.6	132kv Sal-Gel	132kv Sal-Gel	bad weather	LB=1606.46A,C=1.3 no relay operated at our end	Salakati line		Charging Code; NLDC BTN=1927, NLDC IND=191 & NERLDC=235.
2	04.04.2021	17:22hrs	05.04.2021	13:00hrs	19	2	132kv Gel-Jig	132kv Gel-Jig	bad weather		132kv Gel-Jig		Charging Code; BPSO=1929
3	08.04.2021	03:48hrs	08.04.2021	04:18hrs		3.4	132kv Sal-Gel	132kv Sal-Gel	bad weather	Dist protection, REL 670, General trip, RB-phase Zone 1, Dist. 41.92km towards Salakati ss.	Salakati line		Charging Code; NLDC BTN=1942, NLDC IND=423 & NERLDC=471.
4. 132/33/11kV Tingtibi Substation													
i) 66 kV and Above													
1.00	44300.00	0.10	44300.00	0.11	0.00	13.84	132kV Tingtibi-Nanglam	132kV Tingtibi-Nanglam	Temporary fault	Distance Protection Relay: Trip phase ABC Fault Location: 37.25KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
1.00	44316.00	0.64	44316.00	0.65	0.00	-29.74	132kV Tingtibi-Jigmeling	132kV Tingtibi-Jigmeling	Temporary fault	Distance Protection Relay: Trip phase ABC Fault Location: 3.217KM, Fault Zone-1.	132kV Tingtibi-Jigmeling	Temporary	
1.00	44316.00	0.67	44316.00	0.68	0.00	21.13	132kV Tingtibi-Nanglam	132kV Tingtibi-Nanglam	Temporary fault	Distance Protection Relay: Trip phase ABC Fault Location: 1.495KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
1.00	44316.00	0.68	44316.00	0.70	0.00	4.10	132kV Tingtibi-Yumoo	132kV Tingtibi-Yumoo	Temporary fault	Distance Protection Relay: Trip phase ABC Fault Location: 2.756KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
5. 132/33kV Yumoo Substation													
i) 66kV & Above													
1	30.04.2021	0:68:4028	30.04.2021	0:69:528	0		4 132kV, Tingtibi Line Yumoo Ss	OV	Distance relay tripped	Nil		Temporary	
6. 220/33kV Dagapela Substation													
i) 66kV & Above													
1	22.04.2021	12:47:41.1	22.04.2021	0:04:5139	0	0.6	220KV Dagapela-Jig	Dagapela Substation	Over Voltage, IA=5.86 A, 86B, Started p-			Transient Fault	Overvoltage trip

May 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF MAY UNDER SMD DEOTIANG, TD, BPC.

Division: SMD DEOTIANG
 Substation: 132/33/11kV Korkha Substation
 Month: May-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Time		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition during the Outage	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)				
132kV Feeders																
2	Korkha	132kV	Tripped	5/27/2021	0:23 hrs	5/27/2021	0:35 hrs		10	24.41	-	-	-	Tripped	Rating	Grid fail from Nanglung and Tingtho due to occurrence along with grid fail from Rangjung

Division: SMD DEOTIANG
 Substation: 132/33/11kV Korkha Substation
 Month: May-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Time		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition during the Outage	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)				
3	conlay khanglay feeder	132kV	tripping	01.05.2021	12:40	01.05.2021	12:41	0	1	10.838	Distance protection relay M3004 P442	Tripped on ABCN, Zone-1, Fault Current: IA = 763.3A, IB = 791.5A, IC = 762.2A, Fault Location: 15.94km	Transient three-phase Fault	NA	windy	restored in coordination with BPSO
4	konglay Phandokang feeder	132kV	tripping	01.05.2021	12:40	01.05.2021	12:41	0	1	9.488	Distance protection relay R24.650	Tripped on ABCN, Zone-1, Fault Current: IA = 717.5A, IB = 752.3C, 714A, Fault Location: 17.11km	Transient three-phase Fault	NA	windy	restored in coordination with BPSO
5	konglay Phandokang feeder	132kV	tripping	01.05.2021	15:12	02.05.2021	20:06	3X	14	8.418	Distance protection relay R24.650 and ZFOC relay	Tripped on AN, Zone-1, Fault Current: IA = 624A, IB = 59A, IC = 51A, Fault Location: 20.50km, OCB IA= 907A, IB=41A, IC=32A	NA	NA	windy	First changed the feeder twice after transferred to BPSO at 19:14 hrs and 19:44 hrs but could not restore and the feeder was changed the time as instructed by BPSO with clearing code 2507 at 20:07 hrs. This feeder was changed via transfer via at 20:07 with clearing code 2500 from BPSO, but it tripped again clearing code 2504.
18	Cobay	132kV	NA	27.05.2021	0:58	27.05.2021	0:54	0	18	22.176	NA	NA	NA	NA	ignoring at Thundering lightning	Feeder failed due to Grid fail from Korkha but no specific site place at Korkha Substation.
19	Phandokang	132kV	Line Fault	27.05.2021	0:54	27.05.2021	0:47	0	13	21.0	NA	NA	NA	NA	ignoring at Thundering lightning	Clearing code from other contact to BPSO.

Division: SMD DEOTIANG
 Substation: 132/33/11kV Nanglung Substation
 Month: May-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Time		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition during the Outage	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)				
132kV Feeders																
1	132/33kV, 5MVA Tr-F1	132kV	Tripping	5/1/2021	12:58 hrs	5/1/2021	14:13 hrs	0	14	0.48	Non directional EDMT PROTN Relay operated	OC Relay-50A, 50C & tripping relay 86 operated	Tripped due to feeder fault	-	Clear	Tripped due to fault on 132kV Nanglung feeder
2	132/33kV, 5MVA Tr-F2	132kV	Tripping	5/1/2021	13:54 hrs	5/1/2021	14:56 hrs	0	8	0.3	Non directional EDMT PROTN Relay operated	OC Relay-50A, 50C & tripping relay 86 operated	Tripped due to feeder fault	-	Clear	Tripped due to fault on 132kV Nanglung feeder
3	Nanglung-Deotiang Line	132kV	Tripping	5/1/2021	15:19 hrs	5/1/2021	15:27 hrs	0	8	21	MICOM P14DB	Start @ CN, OCB start D=1, E-F1 start (N)=32, up (N)=2, LAB=13.5kV, VBC=89.5kV, VCA=79.87kV, VAN=75.10kV, VBN=74.41kV, VC N=19.44kV, IA=193.3A, IB=32.51A, IC=1.30kA, UNderload=1.096A, IN maximum=1.498kA & tripping relay 86 operated at our end. Distance: Relay -Start @ CN, Start distance: 0km, TOC unit, Tripped (I)=No, 80.01km, fault duration=160.0sec, Relay trip time =0.009s, Fault location=25.06km, Zone-2 towards Deotiang, IA=150.8A, IB=31.24A, IC=1.397kA, VAN=66.97kV, VBN=72.71kV, VCN=12.15kV, Fault resistance=3.488Ω	Tripped on fault	-	Thunder & lightning	Informed to BPSO, and changed the feeder with instruction from BPSO.
4	132/33kV, 5MVA Tr-F1	132kV	Tripping	5/1/2021	16:38 hrs	5/1/2021	16:45 hrs	0	5	0.3	Non directional EDMT PROTN Relay operated	OC Relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Thunder & lightning	Tripped due to fault on 132kV Nanglung feeder
5	132/33kV, 5MVA Tr-F1	132kV	Tripping	5/6/2021	11:06 hrs	5/8/2021	11:05 hrs	0	3	0.43	Non directional EDMT PROTN Relay operated	OC Relay-50A & tripping relay 86 operated	Transient	-	Clear	-
6	132/33kV, 5MVA Tr-F1	132kV	Tripping	5/7/2021	22:24 hrs	5/7/2021	22:29 hrs	0	5	0.52	Non directional EDMT PROTN Relay operated	OC Relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Clear	Tripped due to fault on 132kV Nanglung feeder
7	132/33kV, 5MVA Tr-F1	132kV	Tripping	5/8/2021	09:31 hrs	5/8/2021	09:40 hrs	0	5	0.5	Non directional EDMT PROTN Relay operated	OC Relay-50A & tripping relay 86 operated	Tripped on fault	-	Cloudy	No supply interrupted

Annual Transmission System Performance Report | 2021

Sl. No.	Line Name	Voltage Level	Type of Outage	Shutdown/ Tripping Date	Shutdown/ Tripping Time	Normalization Date	Normalization Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Protection Relay Operated	Tripping Details	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
8	132/38KV, SMOVA Tr-GI	132KV	Tripping	5/11/2021	11:09 hrs	5/11/2021	11:15 hrs	0	6	0.88	Non directional IDMT PROTN Relay operated	O/C Relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Clear	Tripped while test changing 38KV Wanning feeder
9	132/38KV, SMOVA Tr-FB	132KV	Tripping	5/11/2021	21:27 hrs	5/11/2021	21:41 hrs	0	4	0.25	Non directional IDMT PROTN Relay operated	O/C Relay-50C & tripping relay 86 operated	Tripped due to feeder fault	-	Heavy rainfall	Tripped due to fault on 38KV Tsebar feeder
10	132/38KV, SMOVA Tr-GI	132KV	Tripping	5/11/2021	21:37 hrs	5/11/2021	21:31 hrs	0	34	0.53	Non directional IDMT PROTN Relay operated	O/C Relay-50C & tripping relay 86 operated	Tripped due to feeder fault	-	Heavy rainfall	Tripped due to fault on 38KV Tsebar feeder
11	132/38KV, SMOVA Tr-FB	132KV	Tripping	5/11/2021	22:55 hrs	5/11/2021	23:57 hrs	0	2	0.64	Non directional IDMT PROTN Relay operated	O/C Relay-50AA & tripping relay 86 operated	Tripped due to feeder fault	-	Heavy rainfall	Tripped due to fault on 38KV Wanning feeder
12	132/38KV, SMOVA Tr-GI	132KV	Tripping	5/18/2021	03:45 hrs	5/18/2021	03:48 hrs	0	3	0.60	Non directional IDMT PROTN Relay operated	O/C Relay-50AA & tripping relay 86 operated	Tripped due to feeder fault	-	Rainfall	Tripped due to fault on 38KV Wanning feeder
14	Nanglun-Droothang Line	132KV	Tripping	5/27/2021	00:16 hrs	5/27/2021	00:42 hrs	0	26	37	MICOM P442	Distance Relay - Start O A/CN, Tripped O ABC Start distance element, TOC start, Distance trip Z1, system frequency 49.50Hz, AR Lockout shot, fault duration-125.0ms, Relay trip time -89.02ms, Fault location XY-8153km towards Droothang, IA-465.5A, IB-213.0A, IC-353.1A, VAN-16.5kV, VBN-47.71kV, VCN-18.94kV, Fault resistance XY-2.801Ω, Fault in Z1. And tripping relay 86 operated at our end.	Tripped on fault	-	Heavy rainfall with thunder & lightning	Informed to BPSO, Thimphu & closed the CI as per their instruction Both Grid failed and Solution: Grid received at 00:24 hrs.
15	132/38KV, SMOVA Tr-GI	132KV	Tripping	5/27/2021	00:16 hrs	5/27/2021	00:42 hrs	0	26	0.31	Non directional IDMT PROTN Relay operated	O/C Relay-50C & tripping relay 86 operated	Tripped on fault	-	Heavy rainfall with thunder & lightning	Tripped at the instant of Grid failure
16	132/38KV, SMOVA Tr-FB	132KV	Tripping	5/27/2021	00:43 hrs	5/27/2021	01:19 hrs	0	36	0.17	Non directional IDMT PROTN Relay operated	O/C Relay-50C & tripping relay 86 operated	Tripped due to feeder fault	-	Heavy rainfall with thunder & lightning	Tripped due to fault on 38KV Wanning & Wanning feeder
17	Nanglun-Droothang Line	132KV	Tripping	5/31/2021	08:42 hrs	5/31/2021	09:49 hrs	0	7	37.63	MICOM P1ADB	Directional-O/C & E/F Relay: Tripped O W Start O A/CN, O/C start 1-1, E/F start IN1-12, trip IN1-2, VAB-94.18kV, VBC-132.7kV, VCA-52.44kV, VAN-35.31kV, VBN-76.23kV, VC-N=73.37V, IA=1.23kA, IB=263.5A, IC=232.7kA, UNDERVOLT-1.21kA, IN measured-1.211kA & tripping relay 86 operated at our end. Distance Relay -Start O A/N, Start distance element, TOC start, Tripped E/F relay, system frequency 50.10Hz, fault duration-206.5ms, Relay trip time -0.005ms, Fault location -41.20km towards Droothang, IA-1.27kA, IB=259.6A, IC=229.3A, VAN=42.67kV, VBN=71.44kV, VCN=69.62kV, Fault resistance -1.112Ω, Fault in Z3.	Tripped due to feeder fault	-	Rainfall	Informed to BPSO, and changed the feeder with instruction from BPSO.

38KV Feeders

Division:	SMD-DROOTHANG
Substation:	132/33/11kV Droothang Substation
Month:	May 21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Date	Normalization Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Protection Relay Operated	Tripping Details	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
1	112KV Droothang-Nanglun Line	132KV	Tripping	01/05/2021	15:20	01/05/2021	15:29	0	9	-21.43	NS	Nil	Grid fail	NA	Clear	Grid fail from both the end and at our end all breakers were in normal condition.
26	132KV Droothang-Nanglun line	132KV	Tripping	27/05/2021	0:19	27/05/2021	0:44	0	23	-50.00	Distance relay	Start O A/CN, TOC start 1-1, E/F start IN1-12, trip IN1-2, VAB-94.18kV, VBC-132.7kV, VCA-52.44kV, VAN-35.31kV, VBN-76.23kV, VC-N=73.37V, IA=1.23kA, IB=263.5A, IC=232.7kA, UNDERVOLT-1.21kA, IN measured-1.211kA & tripping relay 86 operated at our end. Distance Relay -Start O A/N, Start distance element, TOC start, Tripped E/F relay, system frequency 50.10Hz, fault duration-206.5ms, Relay trip time -0.005ms, Fault location -41.20km towards Droothang, IA-1.27kA, IB=259.6A, IC=229.3A, VAN=42.67kV, VBN=71.44kV, VCN=69.62kV, Fault resistance -1.112Ω, Fault in Z3.	Transient fault	NA	Raining at Droothang Substation	Droothang breaker trip at the same time and fed Droothang breaker closed at 23:00hrs. After the change done in engine at 10:00hrs breaker closed.
28	132KV Droothang-Nanglun line	132KV	Tripping	31/05/2021	0:45	30/05/2021	0:50	0	5	-27.23	Nil	Nil	Transient fault	NA	Raining at Droothang Substation	Grid fail from both the end and at Droothang during O/C A/N. At around 10:00hrs, we set all breakers, rest in normal condition.

Division:	SMD-DROOTHANG
Substation:	132/33/11kV Nanglun Substation
Month:	May 21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Date	Normalization Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Protection Relay Operated	Tripping Details	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
132KV																
1	132/38KV SMOVA Transformer 1	132KV	Tripping	07/05/2021	11:56	07/05/2021	11:57	0	1	0.194	O/C & E/F E30E1	Earth Fault	Tripped due to 38KV Droothang Feeder	-	Clear	
2	Nanglun-Tsajibi Line	132KV	Tripping	15/05/2021	03:57	15/05/2021	14:06	0	31	4.46	Distance relay Microm P442	Tripped on ABCN, Fault Current IA -624.5A, IB-97.26A, IC- 61.74A, IN- 488.5A	Transient Fault	-	Clear	
3	132/38KV SMOVA Transformer 1	132KV	Tripping	20/05/2021	01:00	20/05/2021	01:09	0	5	0.660	O/C & E/F E30E1	Earth Fault	Tripped due to 38KV Droothang Feeder	-	Light Rain	
4	Nanglun-Tsajibi Line	132KV	Tripping	27/05/2021	00:03	27/05/2021	00:34	0	31	39.98	Distance relay Microm P442	Fault Values IA= 1.269kA, IB= 1.345kA, IC= 1.116kA, VAN= 10.69kV, VBN= 11.89kV, VCN= 10.13kV	Over Current	-	Heavy Rainfall	
6	Nanglun-Tsajibi Line	132KV	Tripping	27/05/2021	00:17	27/05/2021	00:34	0	17	38.94	Distance relay Microm P442	Grid fail	Grid fail	-	Heavy Rainfall	Supply fail from Tsajibi end
8	132/38KV SMOVA Transformer 1	132KV	Tripping	27/05/2021	06:40	27/05/2021	06:54	0	5	6.78	O/C & E/F E30E1	Earth Fault	Tripped due to 38KV Droothang Feeder	-	Clear	

Annual Transmission System Performance Report | 2021

Division: SMD-DIOTIANG		Substation: 132/33kV Motanga Substation		Month: May-21												
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protective Relay Operated	Fault Details (As recorded by relay)				
1	Motanga-Phantichang line	132kV	Tripping	5/1/2021	15:12	5/2/2021	13:16	9	4	-8.68	BACKUP PROT.N RELAY ZONE 15	—	OC&EF	—	Normal	Informed BPSO and CB closed from our end at 15:16 hrs
2	Motanga-Droelang line	132kV	Tripping	5/1/2021	15:18	5/2/2021	15:29	11	11	-21.9	BACK CONTROL UNIT RICE79	88A & 88B OPFD	—	—	Normal	Informed BPSO and CB closed from our end at 15:29 hrs
3	Motanga-Droelang line	132kV	Tripping	5/1/2021	15:31	5/2/2021	15:51	22	22	-21.9	MAIN DISTANCE PROTN RELAY RELAY 8	—	—	—	Normal	Line Voltage dropping to 118 kV and CB was tripped from our end. Informed BPSO and line closed at 15:51hrs
4	Motanga-Kangla line	132kV	Tripping	5/1/2021	15:12	5/2/2021	16:08	50	50	1.08	BACK CONTROL UNIT RICE79	88A & 88B OPFD	—	—	Normal	Informed BPSO and with clearing code BHT 2061,N,DC Lada 13 and NERLDC-2069 CB closed at 16:08hrs from our end.
5	Motanga-Droelang line	132kV	Tripping	5/27/2021	0:58	5/27/2021	0:53	37	37	-85	BACKUP PROT.N RELAY ZONE 15	—	OC&EF	—	Raining	Informed BPSO and line restored at 00:53 hrs from our end.
6	Motanga-Ratala line	132kV	Tripping	5/27/2021	0:16	5/27/2021	1:56	1	11	33.37	BACKUP PROT.N RELAY ZONE 15	—	OC&EF	—	Raining	Informed BPSO and with code 35/DC BHT 1035,DC Lada 89 & NERLDC 140-CB closed from our end at 1:56hrs
7	Motanga-Phantichang Line	132kV	Tripping	5/27/2021	1:07	5/27/2021	1:14	4	4	-17.27	MAIN DISTANCE PROTN RELAY RELAY 8	—	OV&V	—	Raining	Informed BPSO and cleared the line at 1:14hrs from our end.
9	Motanga-Droelang line	132kV	Tripping	5/31/2021	9:42	5/31/2021	9:50	8	8	-15.51	MAIN DISTANCE PROTN RELAY RELAY 8	ZONE 1 OPFD & R-88 OPFD	OC&EF	—	Raining	Informed BPSO, as instructed to closed the CB at 9:50hrs from our end.
10	Motanga-Ratala line	132kV	Tripping	5/31/2021	9:42	5/31/2021	10:00	18	18	-20.22	BACKUP PROT.N RELAY ZONE 15	—	OC&EF	—	Raining	Informed BPSO as instructed to closed the CB with code 35/DC BHT 1035,DC Lada 89 & NERLDC 140-CB closed at 10:00hrs from our end.

Division: SMD-DIOTIANG		Substation: 132/33kV Corching Substation		Month: May-21												
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protective Relay Operated	Fault Details (As recorded by relay)				
13	132 kV Kshelhar Line	132 kV	Grid fail	27/05/2021	09:16 hrs	27/05/2021	00:33 hrs	0	17	-23.09	—	—	Grid fail	—	Clear	At 09:16hrs receiving supply from Kshelhar substation full and Corching substation was 15kva but no breaker tripping has occurred at Corching substation.
14	132 kV Kanglung Line	132 kV	Grid fail	27/05/2021	09:16 hrs	27/05/2021	00:33 hrs	0	17	-22.206	—	—	Grid fail	—	Clear	At 09:16hrs receiving supply from Kshelhar substation full and Corching substation was 15kva but no breaker tripping has occurred at Corching substation.

Division: SMD-DIOTIANG		Substation: 132/33kV Phantichang Substation		Month: May-21												
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protective Relay Operated	Fault Details (As recorded by relay)				
1	Kanglung	132kV	Transfer fault	5/2/2021	12:40	5/2/2021	12:44	4	4	9.11	88A & 88B	—	R,N and R phase trip	Not available	Sunny	Test charged and line with stand.
1	Kanglung	132kV	Tripped on fault	5/2/2021	15:12	5/2/2021	20:04	20	52	8.70	50L88 OPFD	ZONE 1 OPFD AND R,N phase trip and fault distance 40.408KM. Fault value I1=1377.49A, I2=1238.09A, I3=1171.95A	R and R phase trip	Not available	Cloudy	Test charge but could not stand line at Kanglung end due ZONE1 OPFD, R Phase trip and relay indicating (OV/UN). Fault Distance: 26.22 km. line normalized at 20:04.02/05/21 after receiving switching code 2066 from BPSO.
4	Motanga	132kV	Tripped on fault	5/2/2021	15:31	5/2/2021	15:56	25	25	8.27	50L88 OPFD	Fault current value: I1=788, I2=548, I3=478, I0=152A. Clear voltage	Over voltage	CB open/tripped at Motanga end	Rainy & windy	Our end breaker was normal and Motanga end breaker was open/tripped.
05	Kanglung	132kV	Tripped on fault	5/22/2021	0:33	5/27/2021	0:49	15	15	21.33	NI	Fault current value: I1=522A, I2=618A, I3=618A, I0=0A. Relay indicating (OV/UN).	OV/UV	Not available	Spiny	Fault current value: I1=0.22A, I2=0.18A, I3=0.08A, I0=0.11A. Relay indicating (OV/UN) Normalized after receiving call from BPSO.
03	Motanga	132kV	Tripped on fault	5/22/2021	0:33	5/27/2021	1:07	33	33	20.88	NI	Fault current value: I1=5.48A, I2=5.37A, I3=5.48A, I0=0.68A. Relay indicating (OV/UN).	OV/UV	Not available	Rainy	Fault current value: I1=5.41A, I2=6.37A, I3=6.48A, I0=0.68A. Relay indicating (OV/UN) Normalized after receiving call from BPSO.

1. 400/220/132/33kV Jigmeling Substation															
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks		
D) 66kV Above															
1	05.05.2021	12:21 hrs	05.05.2021	12:36hrs		-12.990	220kV Jigmeling - Tsirong feeder	Jigmeling SS	Ground fault	Main 1(B ph pick up, zone 1 trip) Main 2(B ph pick up, zone 1 trip)	14.9km		heavy rainfall, thunder and lightning		
2	05.05.2021	12:22hrs	05.05.2021	12:38hrs		1.20	220kV Jigmeling - Dagapeela feeder	Dagapeela SS	Ground fault	Main 1(B ph pick up, zone 1 trip) Main 2(B ph pick up, zone 1 trip)	main 1 - 15.96km main 2- 13.96km		heavy rainfall, thunder and lightning		
3	05.05.2021	12:40hrs	05.05.2021	15:08hrs	2	-11.250	220kV Jigmeling - Tsirong feeder	Jigmeling SS	Ground fault	Main 1 ((R & B ph pick up, z1 trip) Main 2((R & B ph pick up, z1 trip)	main 1 - 4km main 2- 3.17km		heavy rainfall, thunder and lightning		
4	05.05.2021	13:59hrs	05.05.2021	14:53hrs	0	1.33	220kV Jigmeling - Dagapeela feeder	Dagapeela SS		relay general trip			heavy rainfall, thunder and lightning		
5	29.05.2021	09:06 hrs	29.05.2021	09:12 hrs	0	19.44	132 kV Jigmeling - Tingthi	Tingthi SS	Earthfault	Yphase pick up			No DR and relay tripped notified		

2. 220/66/33kV Dhajay Substation													
i) 66kV and above													
1	05.05.2021	12:40hrs	05.05.2021	15:06:56hrs	2	17.03	Jigmeling fev	Dhajay S	main I-Ja=1.77KA, Ib=0.01KA, Ic=86.1 &2, Distance relay Main I&II	Main I=32.3km, Main II=31	Tripped	whole Tsrang is black	
ii) 33kV and below													
1	12.05.2021	2:50hrs	12.05.2021	17:57hrs	14	0.104	Dagapela-I	Dhajay Substation	Ia=4.105A, Ib=452.8A, Ic=450.2A, In=1.371A	MICOMP122	Line segment	Tripped	Feeder restored after O&M head_ESD Dagapela confirmed line clearance.
2	14.05.2021	11:20hrs	14.05.2021	12:40hrs	1	0.079	Rangthangling	Dhajay Substation	Ia=2.25A, Ib=3A, Ic=37.12A, In=34.92A	MICOMP122	Line segment	Tripped	Feeder restored after O&M head_ESD Tsrang confirmed line clearance.
4. 132/33/11kV Timibi Substation													
i) 66 kV and Above													
1	5/3/2021	16:00	5/3/2021	16:05	0	16.2700	V Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Trip phase ABC, Fault Location: 32.90KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
2	5/5/2021	13:57	5/5/2021	14:01	0	12.1000	V Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Trip phase ABC, Fault Location: 34.7KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
3	5/13/2021	13:57	5/13/2021	14:07	0	4.5700	V Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Trip phase ABC, Fault Location: 19.9KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
4	5/26/2021	23:45	5/26/2021	23:55	0	20.3000	V Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Trip phase ABC, Fault Location: 31.44KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
6. 220/33kV Dagapela Substation													
i) 66kV & Above													
1	05.05.2021	0.582638889	05.05.2021	0.62013889	0	-0.94	220KV Dagap	Dagapela	No datas recorded in Relay on t: 86 A, 86B	-	Transient Fault	No datas on relay at ti	

June 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF JUNE UNDER SMD DEOTRANG, TD, BPC.

Division	SMB-DIOTRANG
Substation	132/33/11kV Nangkar Substation
Month	Jun-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)				
1	33KV Chensay Feeder	32.37	Tripped	16.06.2021	5:22	16.06.2021	6:20	0	58	0.173	Over current	IA=719.2A,IB=744.3C=15.81A	Tripped on fault	Over current	Raining	Feeder tripped owing to a 2.2 sec change class case but tripped with same fault, informed to Chensay control room.
2	132/33kV Transformer -I (33kv side)	435.51	Tripped	22.06.2021	12:25	22.06.2021	14:31	4	8	0.471	SUN	SUN	NA	B phase disc contact puncture	Clear	Shutdown taken by remote Teshi office, substation incharge (order to change puncture disc location) and LA of 5MVA x2 with permit no 1413 changed the feeder after informed by BPSO
3	132 KV Phuntsholing	130.52	Tripped	23.06.2021	20:48	23.06.2021	20:52	0	14	15.174	NA	NA	NA	NA	Cloudy	

Division	SMB-DIOTRANG
Substation	132/33/11kV Nangkar Substation
Month	Jun-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)				
33KV Feeders																
1	Nangkar-Deotrang Line	132kV	Tripping	6/8/2021	02:21 hrs	9/8/2021	02:33 hrs	0	12	0.62	MCOM F442	Distance Relay -Start O ADN, Trip O ABC, Star distance element, TOC start, distance trip-Z1,AR lock on shot, system frequency 49.85Hz, fault duration=70.15ms, Relay trip time =80.18ms, Fault location= 9.63km towards Deotrang 1A=81.7A, IB=981.8A, IC=691.6A, VAN=4.498kV, VBN=3.489kV, VCN=4.998kV, Fault resistance = 1.5675Ω, Fault in Z1 & tripping relay 86 operated at our end.	Tripped on fault	-	Heavy rainfall with Thunder & lightning	Information received from Deotrang Substation to change the feeder as per the instruction received at their end from BPSO, Thimphu.
2	Nangkar-Deotrang Line	132kV	Tripping	6/11/2021	16:20 hrs	6/11/2021	16:26 hrs	0	6	9.25	MCOM F442	Directional -OC & E/F Relay: Tripped O N ; Star O AN, O/C start 3=1, DFI start DN>82, slip DN>2, VAB=165.2kV, VBC=131.2kV, VCA=107.2kV, VAN=48.48kV, VBN=74.96kV, VCN=71.98kV, IA=924.6A, IB=62.85A, IC=24.28A, IN=1000=78.6A, IN measured=35.2A & tripping relay 86 operated at our end. Distance Relay -Start O AN, Star distance element, TOC start. Tripped Eht=36, system frequency =49.98Hz, fault duration=193.4ms, Relay trip time =0.900ms, Fault location=71.51 km towards Nanglam 1A=830.3A, IB=62.83A, IC=22.78A, VAN=4.919kV, VBN=75.17kV, VCN=74.25kV, Fault resistance =5.681Ω, Fault in Z5.	Tripped on fault	-	Cloudy	Informed to BPSO & changed the feeder after receiving instruction from BPSO, Thimphu.
3	132/33KV, 5MVA Tr54	132kV	Tripping	6/18/2021	10:57 hrs	6/13/2021	10:38 hrs	0	1	0.58	Non-directional DM1 PROT.N relay operated	O/C relay-50C & tripping relay 86 operated	Tripped due to feeder fault	-	Cloudy	Tripped due to fault on 33KV Wanning Feeder.
4	132/33KV, 5MVA Tr51	132kV	Tripping	6/13/2021	11:27 hrs	6/13/2021	11:28 hrs	0	1	0.43	Non-directional DM1 PROT.N relay operated	O/C relay-50C & tripping relay 86 operated	Tripped due to feeder fault	-	Cloudy	Tripped due to fault on 33KV Wanning Feeder.
5	132/33KV, 5MVA Tr54	132kV	Tripping	6/14/2021	15:02 hrs	6/14/2021	15:30 hrs	0	8	0.37	Non-directional DM1 PROT.N relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Clear	Tripped due to fault on 33KV Wanning Feeder.
6	Sten and (Rangin Grid)	132kV	Tripping	6/25/2021	20:10 hrs	6/25/2021	20:33 hrs	0	23	55.8	-	-	ICT Blaw at Rangin Substation	-	Clear	At 20:33 hrs supply received from Nanglam Substation.

Annual Transmission System Performance Report | 2021

Division:		SMD DHOOTANG															
Substation:		132/33kV Nganglun Substation															
Month:		Jun-21															
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Protection Relay Oper.		Tripping Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protective Relay Oper.	Fault Details (As recorded by relay)					
132kV																	
1	132/33kV 3MVA Transformer -I	132kV	Tripping	01.06.2021	19:04	01.06.2021	19:06	0	2	1.335	Micon & IDMT E/F & O/C relay	Earth Fault	Transient/Earth fault		Clear		
2	132/33kV 3MVA Transformer -I	132kV	Tripping	02.06.2021	05:47	02.06.2021	05:54	0	7	0.978	Micon & IDMT E/F & O/C relay	Earth Fault	33kV Dist. OVP feeder fault		Clear	Test charged and withstood successfully.	
3	132/33kV 3MVA Transformer -II	132kV	Tripping	02.06.2021	05:47	02.06.2021	05:55	0	7	0	Micon & IDMT E/F & O/C relay	Earth Fault	NCT operated for 33kV side		Clear	Test charged and withstood successfully.	
4	132/33kV 3MVA Transformer -II	132kV	Tripping	03.06.2021	17:32	03.06.2021	17:38	0	6	0.661	Micon & IDMT E/F & O/C relay	Over Current	Tripped due to 33kV Pushing Feeder		Heavy Rainy & Thunderstorm		
5	132/33kV 3MVA Transformer -I	132kV	Tripping	08.06.2021	01:37	08.06.2021	01:40	0	3	0.341	Micon & IDMT E/F & O/C relay	Earth Fault	Tripped due to 33kV Decending Feeder		Clear		
6	Nganglun-Ingthi	132kV	Tripping	08.06.2021	02:21	08.06.2021	02:27	0	6	-15.12	Distance relay Micon P44	Grid Fail	Grid Fail		Heavy Rainy & Thunderstorm	Naturalun-Ingthi CB operated at Ingthi end and Nganglun-Deothang CB operated at Nganglun end respectively.	
7	Nganglun-Ingthi	132kV	Tripping	08.06.2021	02:45	08.06.2021	02:53	0	8	-15.12	Distance relay Micon P44	Over Current	AR Lockout Tripped Phase ABC Zoned Frequency 49.82Hz Fault Duration 78.12mSec Oms Relay Trip Time 10.13mSec Fault Resistance 45.96ohm Fault location 40.64km IA= 1.02KA IB= 121.6A IC= 1.09KA VAN= 13.52kV VBN= 81.65kV VCN= 11.59kV		Clear		
8	Nganglun-Ingthi	132kV	Tripping	08.06.2021	02:58	08.06.2021	03:01	0	3	-15.12	Distance relay Micon P44	Grid Fail	Grid Fail		Heavy Rainy & Thunderstorm	Naturalun-Ingthi CB operated at Ingthi end & Nganglun-Deothang CB operated at Deothang end.	
9	132/33kV 3MVA Transformer -I	132kV	Tripping	08.06.2021	10:06	08.06.2021	10:13	0	7	0.69	Micon & IDMT E/F & O/C relay	Earth Fault	33kV Decending feeder fault		Clear		
10	Nganglun-Ingthi	132kV	Tripping	08.06.2021	24:29	08.06.2021	08:25	9	30	-26.56	Distance relay Micon P44						
11	Nganglun-Ingthi	132kV	Tripping	11.06.2021	16:19hrs	11.06.2021	16:20hrs	0	31	-15.59	Distance relay Micon P44	Earth Fault	Fault location=6.97km Fault Resistance=4.872ohm Fault duration 208.4ms Frequency=49.90Hz AV=10.65kV VBN=7.92kV VCN=76.75kV VA=1.002kV IB=78.27A IC=89.47A VA=10.55kV VBN=79.72kV VCN=76.72kV		Clear	Feeder changed after coordination with Ingthi and NLDC with closing code 1687 recovery by modern Kurva Clever	
12	132/33kV 3MVA Transformer -I	132kV	Tripping	14.06.2021	11:49	14.06.2021	11:50	0	1	0.612	Micon & IDMT E/F & O/C relay	Earth Fault	Due to 33kV Decending Feeder fault		Clear		
13	132/33kV 3MVA Transformer -I	132kV	Tripping	15.06.2021	02:57	15.06.2021	02:59	0	2	0.453	Micon & IDMT E/F & O/C relay	Earth Fault	Due to 33kV Decending Feeder fault		Rainy		
14	DCP	132kV	Tripping	16.06.2021	16:29	16.06.2021	16:30	0	1	12.94		NA			Clear	Due to the continuous rainy at site the rain water has seepage inside the CB box and cause the CB position indication lamp to abnormal (not glowing) while reclosing the above problem coordination with SMD maintenance Engg. Incidentally CB tripped at our end.	
15	Nganglun-Ingthi	132kV	Tripping	18.06.2021	17:09	18.06.2021	19:37	2	40	30.25	Distance relay Micon P44	Fault Value: 60 op1A=72.9A IB=149.8A IC=85.87A IN=665.7A VAN=13.14kV VBN=77.88kV VCN=75.62kV Fault Zone 3 Fault location 142km		Clear	Disc got punctured at Ingthi end.	Supply restored after completing the Disc changing work at Ingthi end and coordination to BPSO.	
16	132/33kV 3MVA Transformer -I	132kV	Tripping	18.06.2021	21:22	18.06.2021	21:24	0	2	1.617	IDMT Earth fault & Over current relay	Over Current	33kV Decending feeder fault		Heavy Rainy & Thunderstorm		
17	132/33kV 3MVA Transformer -I	132kV	hand tripped	30.06.2021	18:20	30.06.2021	18:25	0	5	0.807	Micon & IDMT E/F & O/C relay	NA	Abnormal sound from 11kV panel		Clear		
Division:		SMD DHOOTANG															
Substation:		132/33kV Motanga Substation															
Month:		Jun-21															
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Protection Relay Oper.		Tripping Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protective Relay Oper.	Fault Details (As recorded by relay)					
1	132/33kV Transformer	132kV	Tripping	6/2/2021	9:48	6/2/2021	9:54	0	6	0.13	BACKUP PROTIN RELAY REF315	86A OPTD	OC & TF		Normal	Informed BPSO and CB closed from our end at 99.54hrs.	
2	Motanga-Deothang line	132kV	Tripping	6/16/2021	2:20	6/16/2021	2:28		8	-58.84	BACKUP PROTIN RELAY REF314	86A & 86B OPTD, R-PH TRIPS	OC & BF		Rainy, Thunder and lightning	Informed BPSO and line restored at 2:28 hrs from our end.	
3	Motanga-Rangin line	132kV	Tripping	6/16/2021	2:20	6/16/2021	2:45		25	54.59	BACKUP PROTIN RELAY REF315	86A & 86B OPTD, ZONE-1 OPTD, R-PH TRIPS	OC & BF		Rainy, Thunder and lightning	Informed BPSO and with code no NLDC BHT-1119, NLDC India-469 & NERLDC-5276 CB closed from our end at 2:45hrs.	
4	Motanga-Deothang line	132kV	Tripping	6/25/2021	20:38	6/25/2021	20:41		3	-21.5	BACKUP PROTIN RELAY REF315	86A & 86B OPTD	OC & BF		Normal	Informed BPSO and line restored at 20:41 hrs from our end.	
5	Motanga-Pharchothang Line	132kV	Tripping	6/25/2021	20:58	6/25/2021	20:46		8	-9.66	BACKUP PROTIN RELAY REF315	86A & 86B OPTD	OC & BF		Normal	Informed BPSO and changed the line at 20:46hrs from our end.	
6	Motanga-Rangin line	132kV	Tripping	6/25/2021	20:58	6/25/2021	11:48	2	10	9.55	MAIN DISTANCE PROTIN RELAY REL650	86A & 86B OPTD	OV/UV		Normal	Informed BPSO as instructed to closed the CB with code NLDC BHT-1119, NLDC India-1461 & NERLDC-4907 CB closed at 11:48hrs from our end.	
7	Motanga-Rangin line	132kV	Tripping	6/26/2021	1:29	6/26/2021	2:27	1	7	9.35	Hand tripped				Normal	As per the BPSO instruction CB hand tripped and kept under shutdown due to grid problem at Rangin end. BPSO instruct to close CB with code no. NLDC BHT-1160, NLDC India-1465 and NERLDC-4913 CB closed at 2:27hrs from our end.	

Division: SMD-DFOOTHANG Substation: 132/23kV Corling Substation Month: Jun-21																	
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Protection Relay Oper.	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)			Fault Details (As recorded by relay)					
1	132kV Khiliter-Corling Line	132kV	Incoming supply fail	25.06.2021	20:08 hrs	25.06.2021	20:30 hrs	0	20	21.109	Nil	There was no incoming supply due to grid fail		Grid fail		Clear	At 20:08 hrs Incoming supply from Khiliter substation fail and Corling substation was blackout but no breaker tripping has occurred at Corling substation

Division: SMD-DFOOTHANG Substation: 132/23kV Phungchhang Substation Month: Jun-21																	
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Protection Relay Oper.	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)			Fault Details (As recorded by relay)					
1	Kanglung Line (KTLA)	132kV	Grid Fail	6/25/2021	20:38	6/25/2021	20:54		16	7.18	UV/OV Trip	Fault value L1-I690A/L2-I237A/L3-I659A/N-B7A		Nil	Not available	clear	line charged after after called receive from RPSO
2	Motang line (K2LA)	132kV	Grid Fail	6/25/2021	20:38	6/25/2021	20:45		7	5.89	UV/OV Trip	Fault value L1-I321A/L2-I384A/L3-I870A/N-B7A		Nil	Not available	clear	line charged after after called receive from RPSO

1. 400/220/132/33kV Jigmeling Substation

Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks
1) 66kV Above													
	2-Jun-21	21:16 hrs	2-Jun-21	21:39 hrs	0	~205.00	400kV MJ 2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1: Tripped on RYB, Zone-1, Fault Location: 15.03km Main-2: Tripped on RYB, Fault Location: 16km	Transient	
	3-Jun-21	15:34hrs	3-Jun-21	15:44hrs	0	196.34	400kV MJ 2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Fault loop L2L3, Zone 1 trip, Fault distant (25.0km)	Transient	
	15-Jun-21	01:46 hrs	15-Jun-21	02:41 hrs	0	303.24	400kV Interim to Alpaeduar ckt-1			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1: YBph pick up and Z1 & Z1B trip. Fault distance 130.7km. Main-2: YBph pick up and Z1 & Z1B trip. Fault distance 128.9km.	Phase-Phase fault, Main-1; Ia=0.43kA, Ib=1.31kA, Ic=1.07kA Main-2; Ia=0.44kA, Ib=1.3kA, Ic=1.08kA	
	15-Jun-21	01:46 hrs	15-Jun-21	05:21 hrs	3	303.24	400kV Interim to Alpaeduar ckt-2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1: YBph pick up and Z1 & Z1B trip. Fault distance 130.1km. Main-2: YBph pick up and Z1 & Z1B trip. Fault distance 130.0km.	Phase-Phase fault, Main-1; Ia=0.43kA, Ib=1.31kA, Ic=1.07kA Main-2; Ia=0.44kA, Ib=1.3kA, Ic=1.08kA	
	15-Jun-21	02:41 hrs	15-Jun-21	03:52 hrs	1		400kV MJ 1 & MJ3			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA612	OV		
	19-Jun-21	16:42 hrs	19-Jun-21	17:33hrs	0	~292.33	400kV MJ3			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Fault dist(8.4km)	Fault Loop(L1-G)	
	28-Jun-21	15:50 hrs	28-Jun-21	15:50 hrs	0	204.25	400kV Quad inoise Alpaeduar Line-2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1: Rph pick up and Z1 & Z1B trip. Fault distance 70.1km. Main-2: YBph pick up and Z1 trip. Fault distance 74.5km	Ia-1.86kA	

29-Jun-21	06:23 hrs	28-Jun-21	07:36 hrs	1	-21.81	500MVA ICT		7S/8031-5EB90-1FC0DD, SIPROTECT TUT61	67.67N trip				
29-Jun-21	15:56 hrs	28-Jun-21	15:56 hrs	0	-204.25	400kV Quad moose Alipurdwar Line-2		Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1: Yph pick . Fault distance 63.9km. Main-2: Yph pick. Fault distance 63.1km.				
6-Jun-21	11:53 hrs	7-Jun-21	12:17 hrs	0	0.94	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: YBph pick up and Z1 trip. Fault distance 7.7km. Main-2: YBph pick up and Z1 trip. Fault distance 7.07km.	Fault Loop (L2 & L3), Ia=0.02kA, Ib=2.53kA & Ic=2.53kA			
7-Jun-21	00:43 hrs	7-Jun-21	00:54 hrs	0	0.94	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: Tripped on RYN, Zone-1, Fault Location: 7.7km Main-2: Tripped on RYN, Zone-1 & 2 Fault Location: 7.07km	Fault Loop (L1 & L2), Ia=2.46kA, Ib=2.45kA & Ic=0.02kA			
7-Jun-21	08:27 hrs	7-Jun-21	08:41 hrs	0	1.31	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main 1 = Tripped on RYN, Zone 1. Distance. Distance Main-1=7.7km, Main- 2=7.11 km	Ia=2.5kA, Ib=2.5kA, Ic=0.02kA			
7-Jun-21	09:31 hrs	8-Jun-21	13:35 hrs	28	1.31	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main 1 = Tripped on RYN, Zone 1. Main-1=7.7km, Main-2=7.4 km	Ia=2.5kA, Ib=2.5kA, Ic=0.02kA			
12-Jun-21	08:34 hrs	12-Jun-21	10:16 hrs			Bus-coupler			50.51N				
12-Jun-21	10:04 hrs	12-Jun-21	10:16 hrs	0	-133.14	80 MVA ICT- 1		7S/8022-5EB90-1FA0/CC & 7S/8041-5EB90-1FC0/CC	50.51N, WTI LV tripped	Over load			
12-Jun-21	10:59 hrs	12-Jun-21	11:13 hrs			Bus-coupler			50.51N				
12-Jun-21	11:47 hrs	12-Jun-21	12:21 hrs			Bus-coupler			50.51N				
18-Jun-21	17:00 hrs	18-Jun-21	17:23 hrs	0	51.89	50MVA ICT 1 & 2		7S/8022-5EB90-1FA0/CC & 7S/8041-5EB90-1FC0/CC	LV SEF trip, 50N-1 trip				
19-Jun-21	16:42 hrs	19-Jun-21	16:48 hrs	0	ICT-1: -35.5, ICT-2: -35.6	50MVA ICT 1 & 2		7S/8022-5EB90-1FA0/CC & 7S/8041-5EB90-1FC0/CC	Relay Gen.trip, LV SEF trip.				
29-Jun-21	05:35 hrs	29-Jun-21	05:52 hrs	0	1.1	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: Y,Bph and Z1 trip. Fault distance 7.4km. Main-2: Y,Bph and Z1 trip. Fault distance 7.12km.	Fault loop (L2L3)			
29-Jun-21	06:25 hrs	29-Jun-21	06:37 hrs	0	1.76	220kV Dagapela Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-2 optd: YBph pick up and Z1 trip. Fault distance 7.08km. Main-1 optd YBph pick up and Z1 trip. Fault distance 7.5km.	Fault loop (L2L3)			
3-Jun-21	18:39 hrs	3-Jun-21	18:44 hrs	0	13.76	113kV Gelephu Feeder		Distance Relay: SIPROTECT 7SA52 & REL 670	Fault loop L1,L2,L3, Zone 1 trip Fault distance (20.8km)	Transient			
15-Jun-21	02:41 hrs	15-Jun-21	02:53 hrs	0	0	113kV Tsigith Feeder		Distance Relay: SIPROTECT 7SA52 & REL 670	Main-1, RYBph pick up				
18-Jun-21	17:09 hrs	18-Jun-21	19:35 hrs	2	40.67	113kV Tsigith Feeder			Main-1, Rph pick up Fall Dist(75.9km)	Fault Loop(L1-E) Fault current L1-1.3kA.			
2. 220/66/33kV Dhajay Substation													
2) 66kV and above													
1	15.06.2021	02:05hrs	15.06.2021	02:16hrs	0	6.33	Jigmeling feed Dhajay S/	Main II- Ia=99.43A,159.25&6.1 &2, relay Main II	Tripped	whole Tsirang is black			
2	16.06.2021	8:41:07HRS	16.06.2021	8:54:37hrs	0	94.36	Dasachu feed Dhajay S/	Main II- Ia=0.16A,141.9K &6.1 &2, relay Main II	Tripped	whole Tsirang is black			
3. 132/66/33/11kV Gelephu Substation													
2) 66kV and above													
1	03.06.2021	18.40hrs	03.06.2021	19:27		12	el-Salakati & blackout	bed weather	No CB & relay operated at our end	Salakati line	Temporary	Auto reclosed from Jigmeling ss at 18.43hrs	
3	04.06.2021	11.32hrs	04.06.2021	18.23hrs	6	5.4	132kv Gel-Jel	non	Shutdown by Salakati as	non	Salakati line	Temporary	Charging code NLDC BTN=1035,NLDC IND=215,NERLDC= 3194

4. 132/33/11kV Tingtibi Substation													
i) 66 kV and Above													
1	6/8/2021	2:20	6/8/2021	8:18	5	16.6600	v Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Trip phase ABC, Fault Location: 64.49KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
2	6/11/2021	16:20	6/11/2021	16:40	0	17.5700	v Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Start Phase N, Trip phase ABC, Fault Location: 20.14KM, Fault Zone-1	132kV Tingtibi-Nanglam	Temporary	
3	6/15/2021	1:46	6/15/2021	2:02	0	42.2600	v Tingtibi-Nang	Tingtibi-Nang	Temporary fault	Distance Protection Relay: Start Phase: ABC, Trip phase: ABC, Fault Location: 2.013KM, Fault Zone-1.	132kV Tingtibi-Nanglam	Temporary	
4	6/15/2021	1:46	6/15/2021	2:38	0	-44.5700	v Tingtibi-Jigm	Tingtibi-Jigm	Temporary fault	Distance Protection Relay: Start Phase: ABC, Trip phase: ABC, Fault Location: 8.792KM, Fault Zone-1.	132kV Tingtibi-Jigmelling	Temporary	
5	6/18/2021	17:15	6/18/2021	19:36	2	-34.1300	v Tingtibi-Jigm	Tingtibi-Jigm	132kV Main Bus R phase insulator fail	Distance Protection Relay: Start Phase: AN, Fault Location: 403.2M, Fault Zone-4	132kV Tingtibi-Jigmelling	Insulator Fail	
6	6/18/2021	17:15	6/18/2021	19:37	2	31.3200	v Tingtibi-Nang	Tingtibi-Nang	132kV Main Bus R phase insulator fail	Distance Protection Relay: Trip phase AN, Fault Location: 760.7M, Fault Zone-4.	132kV Tingtibi-Nanglam	Insulator Fail	
5. 132/33kV Yurmoo Substation													
i) 66kV & Above													
18.06.2021	0.713888889	18.06.2021	0.85347222	3	3.2	132kV Tingtibi Yurmoo S	Insulator puncture at Tingtibi Ss	Nill			Tingtibi Ss		Restored after comple
6. 220/33kV Dagapela Substation													
i) 66kV & Above													
15.06.2021	0.086805556	15.06.2021	0.09722222	0	-0.64	220KV Dagap	Dagapela over voltage	86 A, 86B, V>1	-		Transient Fault		feeder tripped on over

July 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF JULY UNDER SMD DEOTHANG, TD, BPC.

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping		Normalization Time		Duration of Outage (Hrs)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time		Protection Relay Optd	Fault Details (As recorded by relay)			
132kV Feeders													
1	132/33kV, SMVA Trf-I	132kV	Tripping	7/2/2021	00:19 hrs	7/2/2021	00:23 hrs	0	Non directional IDMT PROT N Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder.
2	132/33kV, SMVA Trf-II	132kV	Tripping	7/2/2021	00:19 hrs	7/2/2021	00:24 hrs	0	Non directional IDMT PROT N Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder
3	132/33kV, SMVA Trf-I	132kV	Tripping	7/2/2021	00:45 hrs	7/2/2021	09:35 hrs	8	Non-directional IDMT PROT N relay operated	O/C relay-50C & tripping relay 86 operated	Tripped while test charging of 33kV Tsebar feeder	-	Kept under shut down due to spark observation from LV side Isolator.
4	132/33kV, SMVA Trf-II	132kV	Tripping	7/2/2021	00:45 hrs	7/2/2021	01:50 hrs	1	Non-directional IDMT PROT N relay operated	O/C relay-50C & tripping relay 86 operated	Tripped while test charging of 33kV Tsebar feeder	-	Delayed in charging due to rainfall.
5	132/33kV, SMVA Trf-I	132kV	Tripping	7/5/2021	09:39 hrs	7/5/2021	09:44 hrs	0	Non-directional IDMT PROT N relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder
6	132/33kV, SMVA Trf-II	132kV	Tripping	7/13/2021	14:22 hrs	7/13/2021	14:27 hrs	0	Non-directional IDMT PROT N relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Yurung feeder
7	132/33kV, SMVA Trf-II	132kV	Tripping	7/13/2021	15:14 hrs	7/13/2021	15:19 hrs	0	Non-directional IDMT PROT N relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Yurung feeder

2		Division: SMD DEOTHANG		Substation: 132/33/11kV Nganglam Substation		Month: Jul-21									
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown)	Shutdown/Tripping		Normalization Time		Duration of (Hrs)	Protection Relay Optd	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks	
				Date	Time	Date	Time			Fault Details (As recorded by relay)					
132kV															
1	Nganglam-Tingthi	132kV	Tripping	09.07.2021	10:27	11.07.2021	12:34	97	Micom.relay9442	Fault Value:IA= 382.4A IB=88.96A IC=101.2A TN=481.2A	Earth Fault (R-PH to Ground)			Test charged wide closing code# 1300 from both end but tripped on same fault. Fault was located towards TN#124-TN#125 where decapping of Disc insulator has caused	
2	Nganglam-Tingthi	132kV	Tripping	21.07.2021	12:00	21.07.2021	12:12	0	Micom.relay9442	(O/C trip, & 86optd, Fault location-135.0km, Zone-3, Fault resistance-1.750 oms, System frequency-50.0Hz, Fault duration: 79.94ms IAK= 58.67A, IB= 858.4A IC= 945.6A, VAN= 118.9kV, VBN= 51.84kV, VCN= 110.4kV	Over Current			Supply restored after coordination to BPSO end Tingthi end with wide switch ON code# 1322 issued by Mr. Sangay, BPSO,Thimphu	
3		Division: SMD DEOTHANG		Substation: 132/33kV Motanga Substation		Month: Jul-21									
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown)	Shutdown/Tripping		Normalization Time		Duration of (Hrs)	Protection Relay Optd	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks	
				Date	Time	Date	Time			Fault Details (As recorded by relay)					
1	132/33kV Trans	132kV	Tripping	7/8/2021	9:42	7/8/2021	9:50	0	BACKUP PROT.N. RELAY REF615	86A OPTD	OC & EF	-		CB closed at 09:50 hrs from our end.	
6	132/33kV Trans	132kV	Tripping	7/15/2021	6:12	7/15/2021	6:18		BACKUP PROT.N. RELAY REF615	86A OPTD,Protection tripped	OC & EF	-		CB closed at 6:18hrs from our end.	
9	132kV Rangia fr	132kV	Tripping	7/20/2021	12:36	7/20/2021	12:55		BCF1/REF615F PROTECTION RELAY	86A &86B OPTD	OC & EF	-		CB closed at 12:55hrs from our end.	
11	132/33kV Trans	132kV	Tripping	7/27/2021	12:59	7/27/2021	13:02		BACKUP PROT.N. RELAY REF615	86A OPTD	OC & EF	-		CB closed at 13:02hrs from our end.	
4. 400/220/132/33kV Jigmeling Substation															
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	Duration of Outages (Min)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks	
400kV															
1	2-Jul-21	00:14 hrs	2-Jul-21	00:41 hrs	0	27	-78.01	500MVA ICT	-78.01	67.67 TOC A Pickup, 67.67 TOC B Pickup	7SJ8031-5EB90-1FC0DD, SIPROTECT 7UT61			ICT tripped along with tripping of 220kV Dagsapela Line	
2	2-Jul-21	01:34 hrs	2-Jul-21	07:40 hrs	6	14	-21.81	500MVA ICT	-21.81	67.67 TOC A Pickup, 67.67 TOC B Pickup, 50Ns - L2 trip	7SJ8031-5EB90-1FC0DD, SIPROTECT 7UT61			ICT tripped along with tripping of 220kV Dagsapela Line and ICT kept shutdown as per BPSO instruction	
4	10-Jul-21	12:49 hrs	10-Jul-21	13:46 hrs	0	57	-78.33	500MVA ICT	-78.33	67.67N HV	7SJ8031-5EB90-1FC0DD, SIPROTECT 7UT61				
5	10-Jul-21	12:49 hrs	10-Jul-21	12:49 hrs	0	0	MJ1-290.15 & MJ3-290.88	MIPA Line 1 & 3	MJ1-290.15 & MJ3-290.88	MJ1: Bph pick up. Fault distance 7.7km. MJ2: Bph pick up and Z1 trip.	SIPROTECT 7SA52, SIPROTECT 7SA611			Line auto reclosed at 1.39s	

Annual Transmission System Performance Report | 2021

220 kV														
1	2-Jul-21	00:14 hrs	2-Jul-21	00:22 hrs	00:14 hrs	0	0.91	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: RYph pick up and Z1/Z1B trip. Fault distance 7.4km. Main-2: RYph pick up and Z1 trip. Fault distance 7.2km.		Fault Loop (L1 & L2), Ia=7.23kA, Ib=7.21kA & Ic=0.02kA		
2	2-Jul-21	00:30 hrs	2-Jul-21	00:37 hrs	00:30 hrs	0	0.91	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: RYph pick up and Z1/Z1B trip. Fault distance 7.6km. Main-2: RYph pick up and Z1 trip. Fault distance 6.98km.		Fault Loop (L1 & L2), Ia=2.7kA, Ib=2.68kA & Ic=0.02kA		
3	2-Jul-21	01:10 hrs	2-Jul-21	01:20 hrs	01:10 hrs	0	0.87	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: RYph pick up and Z1/Z1B trip. Fault distance 7.5km. Main-2: RYph pick up and Z1 trip. Fault distance 7.20km.		Fault Loop (L1 & L2), Ia=7.25kA, Ib=4.24kA & Ic=0.02kA		
4	2-Jul-21	01:34 hrs	3-Jul-21	14:18 hrs	01:34 hrs	35	0.87	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: RYph pick up and Z1/Z1B trip. Fault distance 7.6km. Main-2: RYph pick up and Z1 trip. Fault distance 7.02km.		Fault Loop (L1 & L2), Ia=2.69kA, Ib=2.68kA & Ic=0.02kA	Line declared faulty	
5	20-Jul-21	04:31 hrs	20-Jul-21	04:42 hrs	04:31 hrs	0	0.87	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: Y&Bph pick up and Z1trip. Fault distance 7.4km. Main-2: Y&Bph pick up and Z1 trip. Fault distance 7.12km.		Fault Loop (L1 & L2), Ia=0.02kA, Ib=7.59kA & Ic=7.39kA		
6	28-Jul-21	16:59 hrs	28-Jul-21	17:23 hrs	16:59 hrs	0	-99.52	220kV Tsirang Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: R&Bph pick up and Z1trip. Fault distance 4.90km. Main-2: R&Bph pick up and Z1 trip. Fault distance 4.20km.		Fault Loop (L1 & L3), Ia=3.89kA, Ib=0.30kA & Ic=4.26kA	Line charged as per BPSO code: 1374 , Phub Zam	
7	28-Jul-21	16:59 hrs	28-Jul-21	17:25 hrs	16:59 hrs	0	0.92	220kV Dagapela Feeder	Distance Relay: SIPROTECT 7SA52 & REL670	Main-1: Bph pick up and Z1trip. Fault distance 6.00km. Main-2: R&Bph pick up and Z1 trip. Fault distance 4.11km.		Fault Current Ia=3.62kA, Ib=0.01kA & Ic=3.70kA	Line charged as per BPSO code: 1375 , Phub Zam	
5. 132/66/33/11kV Gelephu Substation														
i) 66kV and above														
1	22.07.2021	13.50hrs	22.07.2021	14.22hrs		32	30	kv Gelephu-Jingmeling	non	Emergency s/d by Salakati ss	No CB operated at our end	Jingmeling line	Temporary	No CB operated at our end
2	23.07.2021	11.27hrs	23.07.2021	13.06hrs		39	22.6	kv Gelephu-Salakati	non	bamboo cutting		Salakati line	Temporary	Charging code NLDC BTN=1344, NLDC IND=1204,NERLDC=6178
3	31.07.2021	06.15hrs	31.07.2021	15.38hrs	9	23	19.4	kv Gelephu-Salakati	Non	Y-Ph conductor snapped from main bus at Salakati Substation.	General trip,fuse fail,Zone I,Y-phase,Dist.43.23km,Differential relay,RYPH, Fault current=R=320.4A,Y=1496.54A,B=242.65A,IN=934.57A.	Salakati line	Temporary	Charging code NLDC BTN=1398, NLDC IND=1629,NERLDC=6491
6. 132/33/11kV Timibi Substation														
i) 66 kV and Above														
1	7/7/2021	10:27	7/11/2021	12:90	98	13	13.6100	132kV Tingtibi-Nanglam/32kV Tingtibi-Nanglam	insulator failed	Distance Protection Relay,Trip phase ABC,Start phase :AN,Fault Location:19.98KM,Fault Zone-1.	132kV Tingtibi-Nanglam		Line fault	
2	7/21/2021	11:59	7/21/2021	12:13	0	14	38.4500	132kV Tingtibi-Nanglam/32kV Tingtibi-Nanglam	Temporary Fault	Distance Protection Relay,Trip phase ABC,Start phase :BC,Fault Location:7.605KM,Fault Zone-1.	132kV Tingtibi-Nanglam		Line fault	
7. 220/33kV Dagapela Substation														
i) 66kV & Above														
1	15.06.2021	0.086806	15.06.2021	0.097222	0	15	-0.64	220KV Dagapela-Jig Dagapela Substation over voltage		86 A, 86B,V>1	-	Transient Fault	feeder tripped on over voltage	

August 2021

Division: SMD-DEOTHANG		Substation: 132/33/11kV Kanglung Substation		Month: Aug-21		Shutdown/Tripping		Normalization Time		Duration of Outage		Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Trip)	Date	Time	Date	Time	(Hrs)	(Min)	Protection Relay Optd	Fault Details (As recorded by relay)					
132kV Feeders																
1	132kV-Corlung	132kv	tripped on fault	7.08.2021	12:39	7.08.2021	12:57	0	18	relay 86 operated	NA	Trip on fault	Faulty	132kV breaker trip due to outgoing feeder fault.		
Division: SMD-DEOTHANG		Substation: 132/33/11kV Deothang Substation		Month: Aug-21												
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Trip)	Date	Time	Date	Time	(Hrs)	(Min)	Protection Relay Optd	Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks		
1	XMER 2	132/33KV	Trip	18.08.2022	11:20	18.08.2022	11:30	0	10		Null			Trip due to low air pressure & card loose.		
2	XMER 2	132/33KV	Trip	18.08.2023	12:17	18.08.2023	12:22	0	5	86				Trip by S/J feeder.Charged & found normal		
Division: SMD-DEOTHANG		Substation: 132/33/11kV Nganglam Substation		Month: Aug-21												
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Trip)	Date	Time	Date	Time	(Hrs)	(Min)	Protection Relay Optd	Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks		
132kV																
1	gkhor-Ngang	132kV	Tripping	06.08.2021	12:39	06.08.2021	12:44	0	5	Micom relayP442	NA	Due to seepage of Rain water inside the CB box that might have caused/lead to tripping of CB .		CB operated at our end only. Supply was restored after coordination to BPSO & Tingtibi end.		
2	nglam-Ting	132kV	Tripping	11.08.2021	02:58	11.08.2021	02:59	0	1	Micom relayP442	NA	Due to seepage of Rain water inside the CB box that might have caused/lead to tripping of CB .		CB operated at our end only. Supply was restored after coordination to BPSO & Tingtibi end.		
3	nglam-Ting	132kV	Tripping	17.08.2021	04:00	17.08.2021	04:05	0	5	Micom relayP442	NA	Due to seepage of Rain water inside the CB box that might have caused/lead to tripping of CB .		CB operated at our end only. Supply was restored after coordination to BPSO & Tingtibi end.		
4	nglam-Ting	132kV	Tripping	17.08.2021	06:58	17.08.2021	07:05	0	7	Micom relayP442	NA		CB operated at our end only. Supply was restored after coordination to BPSO & Tingtibi end.			
5	nglam-Ting	132kV	Tripping	17.08.2021	07:54	17.08.2021	09:11	1	17	Micom relayP442	NA			Supply restored after cleaing and rectifying the seepage rain water from the CB box with vide Switch ON code# 1474 issued by Miss. Tshering Choden, BPSO.		
6	nglam-Ting	132kV	Tripping	27.08.2021	12:31	27.08.2021	12:42	0	11	Micom relayP442	IA-84.09A IB-1.065KA IC-126KA Fault Location 79.88km VAN= 75.51kV VBN= 44.02kV VCN= 37.72kV			Supply restored after coordinating to BPSO and Tingtibi end with vide Switch ON code# 1523 Issued by Mis. Pena Lhamo, BPSO.		

Annual Transmission System Performance Report | 2021

Division:		SMD DEOTHANG		Substation:		132/33kV Motanga Substation		Month:		Aug-21					
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Trip)	Shutdown/Tripping		Normalization Time		Duration of Outage		Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks	
				Date	Time	Date	Time	(Hrs)	(Min)	Protection Relay Optd	Fault Details (As recorded by relay)				
1	132kV Rang	132kV	Tripping	8/5/2021	12:06	8/5/2021	13:16	1	10	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV&UV OPTD	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1408,NLDC India-208 and NERLDC-6689 at 13:16 hrs from our end.	
2	132kV DM	132kV	Tripping	8/6/2021	15:40	8/6/2021	16:04		24	MAIN DISTANCE PROT.N. RELAY-REL.650	86A OPTD Protection tripped	OV&UV OPTD. R&Y&B TRIP	-	CB closed at 16:04hrs from our end.	
3	33kV POP	33kV	Shutdown	8/8/2021	9:33	8/8/2021	10:06		33	HAND TRIPED	-	-	To replace fuse	Shutdown taken by ESD to replace fuses at their end and line charge at 10:06hrs from our end	
4	132kV Deo	132kV	Tripping	8/12/2021	5:23	8/12/2021	5:46		23	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV & UV OPTD	-	Tripped due to voltage shootup to 141.08kV informed BPSO and line charged at 5:46hrs from our end.	
5	132kV Rang	132kV	Tripping	8/12/2021	5:23	8/12/2021	5:50		27	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV & UV OPTD	-	Tripped due to voltage shootup to 141.08kV informed BPSO and line charged at 5:50hrs from our end with code NLDC BHT-1449,NLDC India-572 and NERLDC-6962.	
6	132kV DM	132kV	Tripping	8/12/2021	5:23	8/12/2021	6:24	1	1	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV & UV OPTD	-	Tripped due to voltage shootup to 141.08kV informed BPSO and line charged at 6:24hrs from our end.	
7	132kV Phn	132kV	Tripping	8/12/2021	5:23	8/12/2021	6:27	1	4	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV & UV OPTD	-	Tripped due to voltage shootup to 141.08kV informed BPSO and line charged at 6:27hrs from our end.	
8	33kV Azist	33kV	Shutdown	8/16/2021	16:11	8/16/2021	16:34		23	HAND TRIPED	-	-	To remove jumpering at their end.	CB closed at 16:34hrs from our end.	
9	15MVA Tr	132/33kV	Tripping	8/26/2021	10:03	8/26/2021	10:04		1	Differential Realy RET 650 Operated	SEF protn optd.	-	-	CB closed at 10:04hr from our end.	
10	Rangia Fee	132kV	Tripping	29/08/2021	14:06	29/08/2021	14:50		44	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV/UV	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1535,NLDC India-1797 and NERLDC-7627 at 14:50hrs from our end.	
11	Rangia Fee	132kV	Tripping	29/08/2021	15:37	29/08/2021	16:51	1	14	MAIN DISTANCE PROT.N. RELAY-REL.650	86A & 86B OPTD	OV/UV	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1536,NLDC India-1812 and NERLDC-7633 at 16:51hrs from our end.	

Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	Duration of Outages (Min)	MW before Outage (MW)	Name of feeder	Name of the Substation/Lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks
1. 66kV														
1	500MVA IC	400/220kV	Tripping	0:00	07:49 hrs	44420	07:55 hrs	6	-41.72	7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT61	No relay indication			
2	500MVA IC	400/220kV	Tripping	24-Aug-21	20:58 hrs	44432	21:04 hrs	6	-23.34	7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT61	50Ns 1/2 tripped			
3	500MVA IC	400/220kV	Tripping	0:00	22:45 hrs	44432	23:39 hrs	54		7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT61	50Ns 1/2 tripped			
4	500MVA IC	400/220kV	Tripping	0:00	23:54 hrs	44432	12:47 hrs			7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT62	50Ns 1/2 tripped			
5	400kV Quad	400kV	Tripping	0:00	01:58 hrs	44434	01:58 hrs	0	306.9	SIPROTECT 7SA52, SIPROTECT 7SA611	Main-1; Rph to ground pick. Main-2; Rph to ground pick.	Fault distance 155.9km		
1	220kV Tsrn	220kV	Tripping	0:00	15:47 hrs	44415	16:37 hrs	50	-74.19	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1: Fault Loop Bph to Ground, Z1/Z1B Trip. Fault dist; 21.04km. Main 2: Fault Loop Bph to Ground and Z1 & Z2 Trip.	urrent: Ia; 0.36kA, Ib; 0.14kA & Ic; 4.21kA		
2	80 MVA IC	220kV	Tripping	0:00	04:40 hrs	44420	04:48 hrs	8	-23.98	86.1/86.2 operated	L.V SEF			

2.															
i) 66kV and above															
1	11.08.2021	01:39 hrs	11.08.2021	02:00 hrs	0	21	76.42	Jigmeing feeder	Dhajay SS	Main II Ia=15.486.1 &2, relay Main II	Tripped	bus coupler also tripped at a same time.			
2	11.08.2021	01:39 hrs	11.08.2021	2:12hrs	0	33	-83.06	Dagachu	Dhajay SS	Main II Ia=15.486.1 &2, relay Main II	Tripped	bus coupler also tripped at a same time.			
3. 132/66/33/11kV Gelephu Substation															
i) 66kV and above															
1	11.08.2021	01:36hrs	11.08.2021	02:03hrs	00:00	16.8		kV Gelephu-Salakati	25MVA(HV & LV)	bed weather	ial relay,B-ph,	Salakati line	Temporary	Charging code NLDC BTN=1442, IND=508.NERLDC=6932	NLDC

September 2021

Division: SMD-DEOTHANG															
Substation: 132/33/11kV Kanglung Substation															
Month: #REF!															
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optd	Fault Details (As recorded by relay)			
132kV															
1	Corlung-Kanglung Incomer	132kV	Tripping	02.09.2021	5:58	02.09.2021	6:13	0	15	-18.792	relay P14DB16A6C0540A operated,	IA=411.3, IB=80.34, IC=465.6	Earth fault	Tripped	Corlung-Kanglung incomer Breaker tripped indicating earth fault, test charge done at 6:03 but did not withstand, later again charged at 6:13.
2	Corlung-Kanglung Incomer	132kV	Tripping	10.09.2021	17:10	10.09.2021	17:12	0	2	-21.204	relay P14DB16A6C0540A operated and P41.2(Distance Relay)	IA=658.6, IB=704.4, IC=697.3 and Fault Location = 35.64KM	Over current	Tripped	Corlung-Kanglung incomer Breaker tripped indicating Over current and test charge done and line withstand.
3	Phantsishang	132KV	Tripping	10.09.2021	17:10	10.09.2021	17:30	0	20	20.124	REP615	IA=1.154 x IN, IB=1.261 x IN, IC=1.236 x IN	Over current	Tripped	132KV Phantsishang line tripped on Over current and test charge done and line withstand.
4	Corlung-Kanglung Incomer	132kV	Tripping	10.09.2021	17:39	10.09.2021	17:41	0	2	-21.204	relay P14DB16A6C0540A operated and P41.2(Distance Relay)	IA=774.1, IB=859, IC=786.9 and Fault Location = 16.15KM	Over current	Tripped	Corlung-Kanglung incomer Breaker tripped indicating Over current and test charge done and line withstand.
5	Phantsishang	132KV	Tripping	10.09.2021	17:39	11.09.2021	12:43	19	4	20.124	REP615	IA=1.508 x IN, IB=1.515 x IN, IC=1.644 x IN	Over current	Tripped	132KV Phantsishang line tripped on Over current and test charge done and line did not withstand. Line under faulty. Charged the feeder on dated 11.09.2021 Closing Code 1582 by Tshering Choden (BPSO Thimphu).
6	Phantsishang	132	Line Faulty	29.09.2021	14:05	29.09.2021	14:15	0	10	18.954	Dist. Pct.	NA	Dist.	Line Faulty	Tripped & indicates Distance Protection relay.
7	Phantsishang	132	Shutdown	29.09.2021	16:12								Shutdown	Voltage checking at p/Thang ss	Opening code:0343, issued by BPSO, Tshering Choden, Duty personal
8	Corlung-Kanglung Incomer	132	Line Faulty	29.09.2021	17:27	29.09.2021	18:06	0	39	-1.512	E/F	IA=109.6A,IB=753.8A,IC=96.93A.	Earth fault	Line Faulty	Tripped &earth fault relay.
Division: SMD-DEOTHANG															
Substation: 132/33/11kV Nangkor Substation															
Month: #REF!															
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optd	Fault Details (As recorded by relay)			
132kV Feeders															
1	132/33kV, 5MVA Trf-II	132kV	Tripping	9/1/2021	18:53 hrs	9/1/2021	18:57 hrs	0	4	0.39	Trip relay operated	Tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder.
1	Nangkor-Deothang line	132kV	Tripping	9/28/2021	02:18 hrs	9/28/2021	02:34 hrs	0	16	44.7	MICOM P442	Directional -O/C & E/F Relay: Tripped @ CN 1 Start O/N, O/C start I> 1, E/F1 start IN1>12, trip IN1=2.3/AD=135.6kV, VBC=125.6kV,VCA=102.0kV,VAN=75.0kV,VBN=78.02kV,VCN=57.3kV,IA=185.7A,IB=198.2A,IC=754.7A,INDerived=615.0A, IN measured=614.6A & tripping relay 86 operated at our end.	Tripped on fault	-	Information to BPSO & charged the feeder with the instruction from BPSO

Division: SMD-DEOTHANG		Substation: 132/33/11kV Deothang Substation		Month: #REF!		Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optid	Fault Details (As recorded by relay)					
1	132/33kV 3MVA Transformer I&II	132/33kV	Tripped	02.09.2021	5:17	02.09.2021	5:20	0	3	0.67 & 0.65	NA	Nil		NA		Both the Transformer got tripped due to fault at sumdrujongkhar line. Test carried was done and got stand.	
2	132/33kV 3MVA Transformer I&II	132/33kV	Tripped	03.09.2021	9:19	03.09.2021		0		0.08 & 0.077	NA	Nil		NA	NA	Both the Transformer got tripped due to over current & earth fault of Bangtar line. Test charge was done and got stand for found ok.	
3	132/33kV 3MVA Transformer I&II	132/33kV	Tripped	03.09.2021	18:34	03.09.2021	18:39	0	5	.96 and .95	86 opt.	NA		By Bangtar fir	NA	Transformer was charged with isolating bangtar line and found normal. Burnt the closing coil of Tr.2 LV side we kept Idle charge.	
4	Nangkor-Deothang line	132kV	Tripped	28.09.2021	2:20	28.09.2021	2:31	0	11	-50.22	NA	Nil		NA	NA	Supply tripped at both end (Nangkor and Motanga). No breaker operated at Deothang end. At 2:31 hrs supply charged from Motanga and at 2:34 hrs supply synchronized from Nangkor substation.	
Division: SMD-DEOTHANG		Substation: 132/33/11kV Naganlam Substation		Month: #REF!		Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optid	Fault Details (As recorded by relay)					
1	Naganlam-Tingtibi	132kV	Tripping	01.09.2021	14:55	01.09.2021	15:39	0	44	-18.31	Micom relay P442	NA		Transient Fault		CB operated at Tingtibi end only.	
2	Naganlam-Tingtibi	132kV	Tripping	09.09.2021	11:33	09.09.2021	11:42	0	9	30.7	Micom relay P443	IA= 387.8A IB= 151.0A IC= 164.9A IN= 500.4A VAN= 113.3kV VBN= 133.4kV VCN= 128.4kV A/R lockout 86operated		Earth Fault/Transient Fault		Supply restored after coordination to BPSO and Tingtibi end with vide Switch ON code# 1570, issued by Madam Karma Choden, BPSO	
3	3MVA Transformer	132kV	Tripping	14.09.2021	14:53	14.09.2021	14:55	0	2	0.828	O/C & E/F Micom Relay	NA		Tripped cause due to 33kV Panbang feeder where feeder CB fail to operate.		Charged after Isolating 33kV Panbang Feeder	
4	3MVA Transformer	132kV	Tripping	22.09.2021	02:14	22.09.2021	02:18	0	4	0.674	59G operated	Earth Fault		Earth Fault		Tripped due to 33kV Panbang feeder fault	
5	3MVA Transformer	132kV	Tripping	27.09.2021	12:17	27.09.2021	12:18	0	1	0.954	O/C & E/F Micom Relay	NA		Tripped cause due to 33kV Panbang feeder where feeder tripping coil has burnt out.		Charged after Isolating 33kV Panbang Feeder	

Annual Transmission System Performance Report | 2021

Division:		SMD-DEOTHANG													
Substation:		132/33kV Motanga Substation													
Month:		#REF!													
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optid	Fault Details (As recorded by relay)			
1	132kV Deothang Feeder	132kV	Tripping	9/2/2021	5:58	9/2/2021	8:07		9	-37.9	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV&UV OPTID	-	Informed BPSO, as instructed to closed CB at 06:07 hrs from our end.
2	132kV Phuntshothang F	132kV	Tripping	9/2/2021	5:58	9/2/2021	6:13		15	-16.6	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV&UV OPTID	-	Informed BPSO, as instructed to closed CB at 06:13 hrs from our end.
3	132kV Rangia feeder	132kV	Tripping	9/2/2021	5:58	9/2/2021	6:18		20	38.38	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV&UV OPTID	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1547,NLDC India-44 and NERLDC-7757 charged at 6:18hrs from our end.
4	132kV Rangia feeder	132kV	Tripping	9/6/2021	4:16	9/6/2021	5:42	1	26	49.37	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1559,NLDC India-202 and NERLDC-7961 line charged at 5:42hrs from our end.
5	132kV Deothang Feeder	132kV	Tripping	9/7/2021	5:20	9/7/2021	5:26		6	-33.77	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID	-	Informed BPSO,as instructed to closed CB with code no. NLDC Bht-1563 charged at 5:26hrs from our end.
6	132kV DML feeder	132kV	Tripping	9/7/2021	5:20	9/7/2021	5:38		18	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID	-	Informed BPSO,as instructed to closed CB with code no. NLDC Bht-1564 charged at 5:38hrs from our end.
7	132kV Rangia feeder	132kV	Tripping	9/7/2021	5:20	9/7/2021	5:55		35	26.71	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1565,NLDC India-259 and NERLDC-8010 charged at 5:55hrs from our end.
8	132kV Deothang Feeder	132kV	Tripping	9/16/2021	3:58	9/16/2021	4:08		10	-30.12	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID	-	Informed BPSO, as instructed to closed CB at 4:08hrs from our end.
9	132kV DML feeder	132kV	Tripping	9/16/2021	3:58	9/16/2021	4:11		13	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV & UV OPTID,R,Y,B phase OPTID	-	Informed BPSO, as instructed to closed CB at 4:11hrs from our end.
10	15MVA Transformer	132/33kV	Tripping	9/17/2021	8:35	9/17/2021	8:39		4	0.09	DIFFERENTIAL PROTIN. RELAY-RET650	86A OPTID	OC & EF	-	CB closed at 8:39hrs from our end.
11	15MVA Transformer	132/33kV	Tripping	9/21/2021	16:07	9/21/2021	16:37		30	0.12	DIFFERENTIAL PROTIN. RELAY-RET650	86A OPTID	EF	-	CB closed at 16:37hrs from our end.
12	15MVA Transformer	132/33kV	Tripping	9/22/2021	5:56	9/22/2021	5:58		2	0.07	DIFFERENTIAL PROTIN. RELAY-RET650	86A OPTID,SEF PROTIN OPTID.	OC & EF	-	CB closed at 5:58hrs from our end.
13	15MVA Transformer	132/33kV	Tripping	9/22/2021	14:52	9/22/2021	14:54		2	0.06	DIFFERENTIAL PROTIN. RELAY-RET650	86A OPTID,SEF PROTIN OPTID.	EF	-	CB closed at 14:54hrs from our end.
14	15MVA Transformer	132/33kV	Tripping	9/24/2021	1:07	9/24/2021	1:09		2	0.08	DIFFERENTIAL PROTIN. RELAY-RET650	86A OPTID,SEF PROTIN OPTID.	OC & EF	-	CB closed at 1:09hrs from our end.
15	132kV Deothang Feeder	132kV	Tripping	9/24/2021	5:57	9/24/2021	6:07		10	-49.23	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB with code no. NLDC BHT-1637 at 6:07 hrs line extend from our end.
16	132kV DML feeder	132kV	Tripping	9/24/2021	5:57	9/24/2021	6:07		10	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID,R,Y,B Trip.	OV/UV Trip	-	Informed BPSO,as instructed to closed CB with code no. NLDC BHT-1638 at 6:07 hrs line extend from our end.
17	132kV Deothang Feeder	132kV	Tripping	9/28/2021	2:18	9/28/2021	2:29		11	-43.01	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OC & EF	-	Informed BPSO, as instructed to closed CB at 2:29hrs from our end.
18	132kV Rangia feeder	132kV	Tripping	9/28/2021	2:18	9/28/2021	3:12		54	33.08	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OC & EF	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1650,NLDC India-1654,NERLDC-8988 at 3:12hrs line charge from our end.
19	132kV Deothang Feeder	132kV	Tripping	9/28/2021	2:56	9/28/2021	3:08		12	-43.01	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO, as instructed to closed CB at 3:08hrs from our end.
20	132kV DML feeder	132kV	Tripping	9/28/2021	2:56	9/28/2021	3:10		14	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID,R,Y,B Trip.	OV/UV Trip	-	Informed BPSO, as instructed to closed CB at 3:10hrs from our end.
21	132kV DML feeder	132kV	Tripping	9/28/2021	5:08	9/28/2021	11:14	6	6	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID,R,Y,B Trip.	OV/UV Trip	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1654 at 11:14 hrs line extend from our end.
22	132kV Deothang Feeder	132kV	Tripping	9/28/2021	5:12	9/28/2021	6:40	1	28	-38.87	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1652 at 06:40hrs CB closed from our end.
23	132kV Phuntshothang F	132kV	Tripping	9/29/2021	14:05	9/29/2021	14:11		6	-19.4	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	Zone-1 OPTID,R and Y phase Trip.	-	Informed BPSO,as instructed to closed CB and CB closed at 14:11hrs from our end.
24	132kV Deothang Feeder	132kV	Tripping	9/29/2021	14:15	9/29/2021	14:21		6	-47.73	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 14:21hrs from our end.
25	132kV Deothang Feeder	132kV	Tripping	9/29/2021	14:23	9/29/2021	14:43		20	-47.73	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 14:43hrs from our end.
26	132kV Phuntshothang F	132kV	Tripping	9/29/2021	14:15	9/29/2021	14:47		32	-19.04	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 14:47hrs from our end.
27	132kV Rangia feeder	132kV	Tripping	9/29/2021	14:15	9/29/2021	14:55		40	51.21	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1661,NLDC India-1756,NERLDC-9063 at 14:55hrs line charge from our end.
28	132kV Deothang Feeder	132kV	Tripping	9/29/2021	17:57	9/29/2021	18:01		4	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 18:01hrs from our end.
29	132kV Phuntshothang F	132kV	Tripping	9/29/2021	17:57	9/29/2021	18:04		7	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 18:04hrs from our end.
30	132kV Rangia feeder	132kV	Tripping	9/29/2021	17:57	9/29/2021	18:25		28	0	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1665,NLDC India-1767,NERLDC-9109 at 18:25hrs line charge from our end.
31	132kV Deothang Feeder	132kV	Tripping	9/30/2021	10:58	9/30/2021	11:01		3	54.44	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO,as instructed to closed CB and CB closed at 11:01hrs from our end.
32	132kV Rangia feeder	132kV	Tripping	9/30/2021	10:58	9/30/2021	11:27		29	42.73	MAIN DISTANCE PROTIN. RELAY-REL650	86A & 86B OPTID	OV/UV Trip	-	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1667,NLDC India-1819,NERLDC-931 at 11:27hrs line charge from our end.

Division:		SMD-DEOTHANG													
Substation:		132/33kV Corlung Substation													
Month:		#REF!													
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optid	Fault Details (As recorded by relay)			
1	132 kV Khilikhar line	132 kV	No supply from Khilikhar substation	05.09.2021	12:27 hrs	05.09.2021	12:34 hrs	0	7	2.380	Nil	Nil	There was no 132 kV supply from Khilikhar substation		
2	132 kV Khilikhar line	132 kV	No supply from Khilikhar substation	29.09.2021	17:29 hrs	29.09.2021	17:35 hrs	0	6	2.430	Nil	Nil	There was no 132 kV supply from Khilikhar substation		132 kV Khilikhar-Corlung Line was tripped at Khilikhar Substation.
3	132 kV Kanglung Line	132 kV	No supply from Khilikhar substation	29.09.2021	17:29 hrs	29.09.2021	18:06 hrs	0	37	1.320	Relay 86A and 86B	VT fuse fail	There was no 132 kV supply from Khilikhar substation		132 kV Kanglung Line Tripped at 17:35 hrs when Khilikhar-Corlung Line was charged from Khilikhar end.
Division:		SMD-DEOTHANG													
Substation:		32/33kV Phuntshothang Substation													
Month:		#REF!													
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protecton Relay Optid	Fault Details (As recorded by relay)			
1	Phuntshothang-Motanga	132kV	transient Fau	9/2/2021	5:58	9/2/2021	6:15		17	16.62	REL650 Zone1	(DEF1PDEF1) Trip value: L1: 489.77A, L2: 93.87A, L3: 513.09A, Lr: 597.68A.	Earth fault	Not available	132kV incoming feeder trip at both end, test charged from Kanglung end and did not withstand. Charged from Motanga end and Normalized.
2	Kanglung	132kV	transient Fau	9/10/2021	17:11	9/10/2021	17:33		32	20.15	ONE 1 OPTD AND R, Y, B TR	ZONE1 OPTD AND R, Y, B Phase trip and fault distance 21.232KM Fault value: (I1: 477.93A, I2: 1606.30A, I3: 1513.80A, IO: 46.54	R, Y and B phase trip.	Not available	Test charged and line with stand.
3	Kanglung	132kV	rip on Fau	9/10/2021	17:40	9/11/2021	12:43	19	3	20.15	ONE 1 OPTD AND R, Y, B TR	ZONE1 OPTD AND R, Y, B Phase trip and fault distance 37.1588KM Fault value: (I1: 232.55A, I2: 1337.37A, I3: 215.54A, IO: 21.49	R, Y and B phase trip.	Not available	Tripped again after 7 minutes of test charging and BPSO has instructed for line parting, line charged after TMD cleared the fault with the switch ON code 1582 issued by Mrs. Tshering Choden (BPSO)
4	Kanglung (1K71A)	132kV	Trip on fault	9/29/2021	14:06					19.76	ZONE 1 OPTD, R&B phase trip, FF/BRC and OV/UV Trip	Trip value: L1: 1962.68A, L2: 1621.60A, L3: 30.61A, Lr: 347.49A.	Over current	Not available	Test charge bot could not withstand line at Kanglung end due to ZONE1 OPTD, R&B Phase trip, FF/BRC and relay indicating (OV/UN). Fault Distance: 10.67 km. Line under shutdown for fault finding by TLMU Deothang.
5	Motanga (1K31A)	132kV	Trip	9/30/2021	10:59	9/30/2021	11:01		2	0.74	Nil	Nil	Nil	Not available	Trip at Rangsey and Deothang. Both end CB are normal

1. 400/220/132/33kV Jigmelling Substation													
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks
j) 66kV Above													
1	2-Sep-21	04:06 hrs	2-Sep-21	04:18 hrs	0	-385.42	400kV MJ3	400kV	Tripping	SIPROTECT 7SA52 & SIPROTECT 7SA611	R,Y&B Pickup, Ground Pickup, Zone 1 optd.	Line-Ground fault	
2	7-Sep-21	07:00 hrs	7-Sep-21	07:04 hrs	0	-58.06	500MVA ICT	400/220kV	Tripping	7SJ8031-5EB90-IFC0-DD, SIPROTECT 7UT61	No relay indication		
3	7-Sep-21	07:06 hrs	7-Sep-21	12:22 hrs	5	-58.06	500MVA ICT	400/220kV	Tripping	7SJ8031-5EB90-IFC0-DD, SIPROTECT 7UT62	50Ns 1/2 tripped		
4	16-Sep-21	16:13 hrs	16-Sep-21	16:23 hrs	0	-385.42	400kV MJ3	400kV	Tripping	SIPROTECT 7SA52 & SIPROTECT 7SA611	Main 1 optd, fault loop L2-3-G, Fault Dist. 41.3km. Main 2 optd, L2-3-G, Fault Dist.41.2km	L2-3-Ground fault, (Main-1 Fault current Ia=0.07kA, Ib=6.56kA, Ic=6.34kA.) (Main-2 Fault current Ia=0.07kA, Ib=6.53kA, Ic=6.30kA.)	Line charged as per BPSO instruction
5	8-Sep-21	11:25hrs	8-Sep-21	11:38hrs	0	96.94	220kV Tsirang feeder	220kV	Tripping	50/51N	3ph to Ground, Z1/z1B Trip. Fault	Line-Ground fault	Western Grid fail
6	13-Sep-21	14:19hrs	13-Sep-21	14:23hrs	0	-81.25	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	M	Line-Ground fault	Western Grid fail
7	13-Sep-21	14:20hrs	13-Sep-21	14:26hrs	0	1.1	220kV Dagapela feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1 optd, Fault Loop(B to Ground) Fault dist(2km), Zone 1 optd. Main 2 optd, Fault Loop(B to Ground) Fault dist(1.55km), Zone 1 optd.	Line-Ground fault	
8	17-Sep-21	16:14hrs	17-Sep-21	16:24hrs	0	-86.71	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL671	Main 1: Yph trip, Z1/z1B trip. Fault dist; 17.5km. Main 2: Yph trip, Z1 trip, Fault dist; 20.25km.	Line-Ground fault	charged as per BPSO instructio
9	17-Sep-21	16:14hrs	17-Sep-21	16:41hrs	0	1.01	220kV Dagapela feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1: RYYph trip, Z1/z1B trip. Fault dist; 20.9km. Main 2: Yph trip, Z1 trip, Fault dist; 18.2km.	Line-Ground fault	charged and charged as per BP
10	29-Sep-21	13:37hrs	29-Sep-21	13:51hrs	0	-29.67	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL671	Main 1 optd, Fault Loop(L1-L3 to ground), Fault dist(21.1km), Fault Current I=0.45kA, Iy3.25kA, Ib=2.82kA	Line-Ground fault	Closed tripped on same fault
11	29-Sep-21	13:37hrs	29-Sep-21	14:26hrs	0	1.87	220kV Dagapela feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1 optd, Fault Loop(L2-L3 and ground), Fault dist(25.4km) Fault current Ia=0.02ka Ib=3.09ka Ic=3.22ka	Line-Ground fault	
12	29-Sep-21	13:51hrs	29-Sep-21	14:04hrs	0	-29.67	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL671	Main 1 optd, Fault Loop(L1-L3 to ground), Fault dist(21.1km), Fault Current I=0.45kA, Iy3.25kA, Ib=2.82kA	Line-Ground fault	Closed tripped on same fault
13	29-Sep-21	14:04hrs	29-Sep-21	14:264hrs	0	-29.67	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL671	Main 1 optd, Fault Loop(L1-L3 to ground), Fault dist(21.1km), Fault Current I=0.45kA, Iy3.25kA, Ib=2.82kA	Line-Ground fault	

2. 220/66/33kV Dhajay Substation												
i) 66kV and above												
1	13.09.2021	14:19:15hrs	13.09.2021	14:28:54hrs	0	78.54	Jigmeling feeder	Dhajay SS		Main 1 Ia=0.01/86.1 &2, Distance re Main I=31.3KM, Main II=28.1	Tripped	Line restored as per BPSO
2	17.09.2021	16:13hrs	17.09.2021	16:20hrs	0	86.5	Jigmeling feeder	Dhajay SS		Main 1 Ia=0.20/86.1 &2, Distance re Main I=20.1KM, Main II=20.9	Tripped	Line restored as per BPSO
3	29.09.2021	13:36hrs	29.09.2021	13:53hrs	0	29.54	Jigmeling feeder	Dhajay SS		Main 1 Ia=0.53/86.1 &2, Distance re Main I=13.7KM, Main II=10.4	Tripped	Line restored as per BPSO
4	29.09.2021	14:03hrs	29.09.2021	14:12hrs	0	0	Jigmeling feeder	Dhajay SS		Main 2, Ia86.1 &2, Distance relay Main II	Tripped	since the line couldn't resto
5	29.09.2021	14:03hrs	29.09.2021	14:07hrs	0	1.02	ICT-II	Dhajay SS		ONLY 87 relay pick 86.1 &2, 87 relay	Tripped	Since Rurichu feeder was h
6	29.09.2021	14:03hrs	29.09.2021	14:08hrs	0	0	ICT-I	Dhajay SS		Diff A=1.83/ln0, Re 86.1 &2, 87 relay	Tripped	Since Rurichu feeder was h
7	29.09.2021	14:03hrs	29.09.2021	14:21hrs	0	2.9	Dagachu	Dhajay SS		Main 2, Ia86.1 &2, Distance relay Main II	Tripped	Since Rurichu feeder was h
3. 132/66/33/11kV Gelephu Substation												
i) 66kV and above												
1	14.09.2021	16.28hrs	14.09.2021	17.02hrs		21.8	132kv Gel-Sal fdr	132kv Gel-Sal fdr		General trip,YB-ph,Zone I,Dist.6.03km,Fault current,R-98.97A,Y-2736.19A,B-2618.54A,N-19.05A		Charging code= NLDC BTN=1600,NLDC IND=767,NERLDC=8357
4. 132/33/11kV Timibi Substation												
i) 66 kV and Above												
1	9/1/2021	14:58	9/1/2021	15:38	0	18.7200	132kV Tingtibi-Nangla	132kV Tingtibi-Nangla	Temporary Fault	Distance Protection Relay:Trip phase ABC,Start phase :AN,Fault Location:30.82km,Fault Zone-1.	132kV Tingtibi-Nanglam	Tempoary
2	9/9/2021	10:33	9/9/2021	10:42	0	31.6100	132kV Tingtibi-Nangla	132kV Tingtibi-Nangla	Temporary Fault	Distance Protection Relay:Trip phase ABC,Start phase :AN,Fault Location:XY 17.6km,Fault Zone-1.	132kV Tingtibi-Nanglam	Tempoary
3.00	44466.00	0.62	44466.00	0.62	0.00	14.49	132kV Tingtibi-Jigmeling	132kV Tingtibi-Jigmeling	Temporary Fault	Distance Protection Relay:Trip phase ABC,Fault Location: 19.12km,Fault Zone-1.	132kV Tingtibi-Jigemling	Tempoary

October 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF OCTOBER UNDER SMD DEOTHANG, TD, BPC.

Division: SMD-DEOTHANG															
Substation: 132/33/11kV Khibra Substation															
Month: Oct 21															
SL No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)			
132kV Feeders															
1	Khoribu	132kV	Tripped	02-10-21	06:45 hrs	07:24 hrs			49	21.78	Nil	Nil	Grid fail		Grid fail from Nongker end.
Division: SMD-DEOTHANG															
Substation: 132/33/11kV Kanglung Substation															
Month: Oct 21															
SL No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)			
132kV															
1	Manibhoche	132	Shutdown	29/09/2021	16:12	01/10/2021	16:45	48	33	0.072	NA	NA	Shutdown	Change of jumpering at location 89	Opening code:0343, issued by BPSO, Thering Chodon, Duty personal. Closing code: 1671 issued by Kinley Wangmo,BPSO.
2	Coring	132	Grid failed	02/10/2021	6:42	02/10/2021	7:34	0:52	52	-18.468	NA	NA	Whole Eastern Power Grid failed	NA	Source Fault
3	5MVA Transform or-II	132	Tripped	17/10/2021	10:21	17/10/2021	14:08	3	47	0.849	NA	NA	30F OLTC bush tripped	NA	Tripped on OLTC Busholz pressure low
4	5MVA Transform or-II	132	Tripped	19/10/2021	21:15	20/10/2021	11:35	14	20	0.969	NA	NA	30F OLTC Busholz tripped	PRV limit switch short circuit	Tripped on OLTC Busholz pressure low
Division: SMD-DEOTHANG															
Substation: 132/33/11kV Naangor Substation															
Month: Oct 21															
SL No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)			
132kV Feeders															
1	Naangor-Nganglam	132kV	Tripping	10/2/2021	06:38 hrs	10/2/2021	07:33 hrs	0	55	2.66	MICOM P442	Directional -OC & E/F Relay: Tripped O N : Start O CN,OC start 1-1, E,F1 start IN1>L2, trip IN1>2.VAB=135.6V, VBC=117.2kV,VCA=111.8kV,VAN=76.902 V,VBN=76.531V,VCN=56.15kV,IA=47.94 A,IIP=70.68A,IC=697.4A, INDerive=635.4A, IN measure=633.2A & tripping relay 86 operated at our end.	Tripped on fault	-	At 06:45 hrs test charged the feeder but CB couldn't get closed, inspected all the equipment in respect to the feeder, checked the Spring and closed CB at 07:05 hrs but couldn't stand. Informed to BPSO. At 07:18hrs CB from Nganglam end was opened and due to test charging CB spring got discharged at our end. The feeder was charged at 07:33 hrs after fully charging the CB spring with CB in open condition at Nganglam end.
2	5MVA Transform or-L, 13.2/22/11 kV	132kV	Tripping	10/3/2021	01:38 hrs	10/3/2021	01:42 hrs	0	4	0.46	Non directional PROT N Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped on feeder fault	-	Tripped while test charging 33kV Wamcong feeders.
3	Naangor-Deothang	132kV	Tripping	#####	05:23 hrs	#####	05:42 hrs	0	19	47.4	MICOM P442	Directional -OC & E/F Relay: Tripped O N : Start O CN,OC start 1-1, E,F1 start IN1>L2, trip IN1>2.VAB=133.5kV, VBC=124.2kV,VCA=101.8kV,VAN=74.33k V,VBN=76.82kV,VCN=57.2kV,IA=188.4A, IB=302.5A,IC=954.9A, INDerive=635.4A, IN measure=602.6A & tripping relay 86 operated at our end.	Tripped on fault	-	Informed to BPSO, Thimphu and Charged the feeder with closing code-1713 from their end
4	5MVA Transform or-L, 13.2/22/11 kV	132kV	Tripping	#####	08:45 hrs	17/10/2021	08:56 hrs	0	6	0.54	Non directional PROT N Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 23kV Naangor feeder.
5	5MVA Transform or-II, 13.2/22/11 kV	132kV	Tripping	#####	08:45 hrs	#####	08:48 hrs	0	3	0.34	Non directional PROT N Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Naangor feeder.
6	5MVA Transform or-L, 13.2/22/11 kV	132kV	Shut down	#####	12:10 hrs	#####	16:04 hrs	3	34	0.42	-	-	-	To install CT for 2.5MVA TFR-1	Shut down taken by SMD Group Deothang
7	5MVA Transform or-II, 13.2/22/11 kV	132kV	Shut down	#####	13:10 hrs	#####	16:56 hrs	3	46	0.23	-	-	-	To install CT for 2.5MVA TFR-1	Shut down taken by SMD Group Deothang

Division: SMD-DEOTHANG		Substation: 132/33/11kV Nganglam Substation		Month: Oct-21											
SL No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Optd	Fault Details (As recorded by relay)			
132kV															
1	anglam-Tia	132kV	Tripping	02.10.2021	06:35	02.10.2021	06:43	0	8	12.86	Micom relay P443	IA= 31.63A IB= 151.048 066A IC= 164.9818.6A IN= 500.4A VAN= 80.55kV VBN= 78.78kV VCN= 128.441.41kV A/R lockout 80operated	Earth Fault/Transient Fault		Supply restored after coordination to BPSO and Tingbi end with vide Switch ON code# 1570, issued by Modan Karma Choden, BPSO.
2	A Transform	132kV	Tripping	09.10.2021	15:20	09.10.2021	15:23	0	3	0.698	EF & O/C Micron relay	NA	Tripping due to 3 kV Puhang feeder earth fault		
1.490/220/132/33kV Jigmeing Substation															
SL No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	Duration of Outages (Min)	MW before Outage (MW)	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks	
0.66kV Above															
1	10-Oct-21	04:52 hrs	10-Oct-21	06:03 hrs	1	16	154.55	400kV Algoduar Quad source line - 2	400kV Algoduar and jurelugs	Line-Ground fault, fault current L3 = 1.716A	SIPROTECT 75A52 & SIPROTECT 75A611	Main 1 (R) phase pick up, ground pick up, zero1 optd and Zone1B optd at distance 126.8km) Mon2(R) phase pick up, ground pick up, zero1 optd and Zone1B optd at distance 133.6km	Line-Ground fault	Line Charged as per BPSO instruction (Karma Yangtso)	
4.132/33/11kV Tambi Substation															
0.66 kV and Above															
1	10/2/2021	6:39	10/2/2021	6:45	0	7	16.3409	132kV Tingbi-Nanglam	132kV Tingbi-Nanglam	Temporary Fault	Distance Protection Relay/Trip phase (ABC,Star phase ,CN,Final Location:10.626M,Fault Zone-1)	132kV Tingbi-Nanglam	Temporary		
1	05.10.2021	2023 hrs	05.10.2021	2027 hrs	0	4	0	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault on Panakha Feeder 102	
2	07.10.2021	0842 hrs	07.10.2021	0848 hrs	0	6	0.51	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault on Panakha Feeder 102	
3	07.10.2021	2240 hrs	07.10.2021	2243 hrs	0	3	0.38	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault on Panakha Feeder 102	
4	11.10.2021	1509 hrs	11.10.2021	1513 hrs	0	4	0.56	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault & over current on Panakha Feeder 102	
6	16.10.2021	0206 hrs	16.10.2021	0211 hrs	0	4	0.32	Transformer 2 & Incomer 2	Danji Substation & all outgoing Feeders	Trip	DIFF PRIN OPTD	NA		B Phase trip	
7	18.10.2021	0640 hrs	18.10.2021	0646 hrs	0	6	0.64	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault on Gasa Feeder 108	
8	18.10.2021	2258 hrs	18.10.2021	2302 hrs	0	4	0.42	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N & 86 OPTD	NA		Tripped due to earth fault on Panakha Feeder 102	
9	19.10.2021	0849 hrs	19.10.2021	0855 hrs	0	5	0.66	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N, B Ph Trip & O/C	NA		Tripped due to earth fault & over current on Gasa Feeder 108	
10	20.10.2021	0957 hrs	20.10.2021	1002 hrs	0	5	0.57	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N, RYB Trip & EF	NA		Tripped due to earth fault on Panakha Feeder 102	
11	20.10.2021	1341 hrs	20.10.2021	1347 hrs	0	5	0.62	Transformer 2	Danji Substation & all outgoing Feeders	Trip	50 N, RYB Trip & EF	NA		Tripped due to earth fault on Gasa Feeder 108	

November 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF NOVEMBER UNDER SMD DEOTHANG, TD. BPC.

Division: SMD-DEOTHANG		Substation: 132/33/11kV Killikhar Substation		Month: Nov-21											
SL No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Optd	Fault Details (As recorded by relay)			
132kV Feeders															
33kV Feeders															
1	10mva transformer LV(33kV side)	33KV	Tripped	11/3/2021	14:00hrs	11/3/2021	16:28hrs	3	28	0.555	IADiff 3.689pu,IBDiff 3.688pu,	IADiff 3.689pu,IBDiff 3.688pu,	Tripped	Tripped	Tripped due to LA blast Y phase.

Annual Transmission System Performance Report | 2021

Division: SMD-DEOTHANG		Substation: 132/33kV Motanga Substation		Month: #REF!											
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown)	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Shutdown	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)			
1	132kV Rangia Feeder	132kV	Tripping	11/5/2021	20:25	11/5/2021	20:49		24	16.9	OC & EF	IL1=0.789,IL2=0.180,IL3=0.168	Tripped on fault	-	Informed BPSO, as instructed to closed CB with code no.NLDC Bht-1792,NLDC India-320,NERLDC-277 CB closed at 20:49hrs from our end.
3	15MVA Transformer	132/33kV	Tripping	#####	8:00	#####	8:21		21	1.83	OC & EF,86A & 86B OPTD,SEF OPTD.	Nil	Tripped on fault	-	CB closed at 18:22hrs from our end.
6	DML Factory Feeder	132kV	Tripping	#####	22:59	#####	23:03		4	0	OV/UV,R,Y,B TRIP,86A & 86B OPTD	Nil	Tripped on fault	-	Informed BPSO, as instructed to closed Ch with code no. NLDC BHT-1860 closed at 23:04hrs from our end.

Sl. No.	Date of Tripping	Time of Outages/Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outages (Hrs)	Duration of Outages (Min)	MW before Outage (MW)	MU Lost During Outages	Name of feeder	Name of the Substation/lines Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location (KM)	Type of outages	No. of Customers Affected	Customer Hours Affected	Remarks
2. 220/66/33kV Dhajay Substation																	
i) 66kV and above																	
1	26.11.2021	20:37hrs	26.11.2021	20:48hrs		11	13.88	2.544666667	Jigmeling feeder	Dhajay Substation	over current	21.2 distance relay main-2, Ia=1161.51A	Tripped	-	Entire area who are given supply from this feeder.	0.18333	feeder restored after as per BPSO instruction.
2	26.11.2021	20:37hrs	26.11.2021	20:49hrs		12	47.12	9.424	Dagacho Feeder	Dhajay Substation	over current	21.2 distance relay main-2, Ia=	Line segn	Tripped	Entire area who are given supply from this feeder.	0.2	feeder restored after as per BPSO instruction.
6. 220/33kV Dagapela Substation																	
i) 66kV & Above																	
1	04.11.2021	0.536806	04.11.2021	0.549306	0	19	2.8	2.8	220/33kV Transform	Dagapela		86A	-	transient	whole Dagana	0.01319	tripped while tripping incomer at 33kV side
2	04.11.2021	0.536806	04.11.2021	0.549306	0	19	2.8	2.8	220/33kV Transform	Dagapela		86A	-	transient	whole Dagana	0.01319	tripped while tripping incomer at 33kV side
3	10.11.2021	0.117361	10.11.2021	0.349306	5	35	7.74	7.74	220/33kV Transform	Dagapela		86A	Relay sett	transient	whole Dagana	0.23264	tripped number of times in between due to higher load and low relay setting. Charged successfully after CNPD changed the setting
4	10.11.2021	0.117361	10.11.2021	0.349306	5	35	7.74	7.74	220/33kV Transform	Dagapela		86A	Relay sett	transient	whole Dagana	0.23264	tripped number of times in between due to higher load and low relay setting. Charged successfully after CNPD changed the setting

December 2021

MONTHLY OUTAGE REPORT FOR THE MONTH OF DECEMBER UNDER SMD DEOTHANG, TD, BPC.																	
Division: SMD-DEOTHANG		Substation: 132/33kV Kibbar Substation		Month: Dec-21													
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for	Remarks		
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operd	Fault Details (As recorded by relay)					
1	Carling	132kV	Tripped	12/2/2021	06:45hrs	12/2/2021	09:47hrs		2	12.02	Nil	IA=21.65A, IB=32.45A, IC=20.65A, VAN=75.38kV,VRM=77.90kV,VCN=77.59kV, Fault zone none	Opens of CB Kuricha-Nangkhov line from Nangkhov end.	Nil	Tripped due opens of CB Kuricha-Nangkhov line from Nangkhov end (CB pole Discrepancy) at same time Carling tripped from kibbar end		

District: SMD DEOTHANG		Substation: 132/33/11kV Naagkar Substation		Mark: Div-21											
Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping		Normalization Time		Duration of Outage		MW before Outage (MW)	Tripping Details		Type/Cause of Fault	Reason for Outage	Remarks
				Date	Time	Date	Time	(Hrs)	(Min)		Protection Relay Operated	Fault Details (As recorded by relay)			
132kV Feeders															
3	132/33kV, 5MVA Td-I	132kV	Tripping	#####	03:05 hrs	#####	03:10 hrs	0	5'	0.42	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Wanrong Feeder.
4	132/33kV, 5MVA Td-II	132kV	Tripping	#####	03:05 hrs	#####	03:11 hrs	0	6'	0.162	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Wanrong Feeder.
5	132/33kV, 5MVA Td-I	132kV	Tripping	#####	08:35 hrs	#####	08:40 hrs	0	5'	0.63	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped while test charging 33kV Wanrong feeder
6	132/33kV, 5MVA Td-II	132kV	Tripping	#####	08:35 hrs	#####	08:41 hrs	0	6'	0.42	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped while test charging 33kV Wanrong feeder
7	132/33kV, 5MVA Td-I	132kV	Tripping	#####	11:57 hrs	#####	11:58 hrs	0	1'	0.6	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped while test charging 33kV Wanrong feeder
8	132/33kV, 5MVA Td-II	132kV	Tripping	#####	11:57 hrs	#####	11:58 hrs	0	1'	0.42	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped while test charging 33kV Wanrong feeder
9	132/33kV, 5MVA Td-I	132kV	Tripping	#####	16:32 hrs	#####	16:39 hrs	0	7'	0.59	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder
10	132/33kV, 5MVA Td-II	132kV	Tripping	#####	16:32 hrs	#####	16:37 hrs	0	5'	0.38	Non directional PROTIN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Tsebar feeder
1. 400/230/132/33kV Bjugang Substation															
Sl. No.	Date of Tripping	Time of Outage/ Time of Tripping	Date of Normalization	Time of Fault was Cleared	Duration of Outage (Hrs)	MW before Outage (MW)	Name of Feeder	Name of the Substation Bus Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks		
0 66kV Above															
1	24.12.2021	11:05 hrs	24.12.2021	15:21 hrs	4	0.60	Gelphu SS	Distance relay main 1 pickup & main 2 pickup. B phase rky 7.0ly.	Fault loop LB-N.	SEPROTUS*SA52 & REL 670	Fault Distance: 14.1km.				
2. 220/66/33kV Dhajey Substation															
0 66kV and above															
1	09.12.2021	12:17:15hrs	09.12.2021	12:29:06hrs		1.4	Jugneling feeder	Dhajey Substation	Broken conductor	Distance relay main-1, Ia=0.06A, Ib=0.07A, Ic=0.09A, Ia=0.11A, Va=129.83kV, Vb=130.44kV, Vc=129.99kV.	Tripped	feeder restored after as per BPSO instruction.			
2	09.12.2021	13:28:36hrs	10.12.2021	10:53hrs		9	Jugneling feeder	Dhajey Substation	Broken conductor	Distance relay main-2, Ia=0.08A, Ib=0.15A, Ic=0.12A, Ia=0.05A, Va=110.24kV, Vb=111.18kV, Vc=110.49kV.	Tripped	feeder restored after as per BPSO instruction.			
3	29.12.2021	13:52:06hrs	29.12.2021	13:59hrs		27.65	Jugneling feeder	Dhajey Substation	Broken conductor	Distance relay main-2, Ia=0.08A, Ib=0.19A, Ic=0.16A, Ia=0.08A, Va=121.61kV, Vb=121.77kV, Vc=121.92kV.	Tripped	feeder restored after as per BPSO instruction.			
3. 132/66/33/11kV Gelphu Substation															
0 66kV and above															
1	24.12.2021	11:05hrs	24.12.2021	11:29hrs		-3	132kV Gel-Sul	Gelphu SS	Equipment Failure	Dist trip C,Zone 4LA=114.8A,IB=160.7AJC=L310KA &VAN=80.56A	Gelphu s/s	temporary	Charging Code, NLDC BTN=1791, NLDC IND=309 & NLDC=772. Voltage magnitude=VA=138.5kV,VB=136.8kV,VCA=134.5kV &VN=2.89kV		
2	24.12.2021	11:13hrs	24.12.2021	15:19hrs	4	0	132kV Gel-Eg	Gelphu SS	Equipment Failure	Hand tripped	Gelphu s/s				
4. 220/66/33kV Dagapeta Substation															
0 66kV & above															
1	25.12.2021	06:28:61	25.12.2021	06:51:89	0	7.75	220/66kV Transform Dagapeta	IA=70.81mA, IB=188.2mA, IC=162.5mA, HV 97.9kV.	86A	transient		Charged after isolating Lamcingkha . Tripped along with 33kV buscoupler			

Western Grid Outages January 2021

Tripping for the month of January 2021, SMD Phuentsholing												
Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/Substation]	Remarks
(A) 400/220/66/11 kV Malbase Substation												
1	21.01.2021	1:35	21.01.2021	16:50	15	18	50/63MVA Transformer II	Malbase S/S	-	OLTC BUCH trip, 27 trip	OLTC, OSR	Tripped on OLTC Buchloz at 1:35 Hrs and issued shutdown to maintenance team, SMG vide PTW No. MSS/03/2021 to rectify the OLTC OSR at 9:50 Hrs. Checked LV CB, the inter tripping scheme of the transformer and charged then transformer at 16:50 Hrs.
2	22.01.2021	22:27	23.01.2021	12:18	13	20	50/63MVA Transformer II	Malbase S/S	-	OLTC BUCH trip, 27 trip	OLTC, OSR	Tripped on OLTC Buchloz at 22:27 Hrs dated 22.01.2021 and issued shutdown to maintenance team, SMG vide PTW No. MSS/04/2021 to rectify the OLTC OSR at 9:30 Hrs. After rectifying the fault charged the transformer at 12:18 Hrs of 23.01.2021
(B)220/66/11 kV Singhigoan Substation												
no tripping												
(B)66/33/11 kV Phuentsholing Substation												
1	10.01.2021	12:42	10.01.2021	12:47	0	0.51	5MVA transformer (66/11kV)	11kV fdr II, V and 11kV fdr VII	Tripped	OLTC trip, 86	Substation	5MVA transformer got tripped due to heavy fault on 11kV feeder VII(Hospital). At 12:47hrs normalised the transformer.
2			11.01.2021	8:55	8	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Nil		At 08:55hrs charged 66kV Pling-Malbase feeder which was under idle condition with charging code 1134 from BPSO, since 66kV Pling-Gedu section was taken shutdown by TMD,Pling for replacement of broken insulator at Kabreytar cluster area. On dated 12.01.2021 at 11:39hrs as per instruction from BPSO opened CB of 66kV Pling-Malbase feeder with opening code 0022 from BPSO at our end and feeder was kept under idle condition.
2	21.01.2021	9:13	23.01.2021	14:50	5	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Nil		At 09:13hrs 66kV Pling-Malbase feeder (feeder under idle position) was taken shutdown by TMD,Pling with work permit no 604 for carrying out annual maintenance at location PS # 16 with opening code 0040 from BPSO. On dated 23.01.2021 at 14:50hrs normalised the feeder with charging code 1186 from BPSO.
3	23.01.2021	15:12				-2.49	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Nil		At 15:21hrs 66kV Pling-Malbase feeder CB was kept open from our end with opening code 0048 as per instruction from BPSO.
3			25.01.2021	8:36	8	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Nil	Line	At 08:36hrs charged 66kV Pling-Malbase feeder which was under idle condition with charging code 1181 from BPSO, since 66kV Pling-Gomtu feeder was taken shutdown by TMD,Pling for replacement of polymers insulator and RoW clearing.
4	25.01.2021	8:36					66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder		Nil	Line	At 08:36hrs 66kV Pling-Gomtu feeder was taken shutdown by Parash, AE, TMD,Pling with work permit no. 609 opening code 0051 from BPSO for replacement of polymers insulators and RoW clearing.
(D) 66/33/11 kV Gedu Substation												
1	07.01.2021	20:35	07.01.2021	20:37	0	0.87	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay 2. Tripping relay 86	Line segment	Test charged and hold normal.
2	07.01.2021	20:43	07.01.2021	21:01	0	0.87	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay 2. Tripping relay 86	Line segment	Test charged and hold normal.
3	07.01.2021	21:20	07.01.2021	21:22	0	0.87	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay 2. Tripping relay 86	Line segment	Charged after opening breaker towards power house fdr from 33kV Gurungdara Substation.
4	07.01.2021	21:57	07.01.2021	22:03	0	0.87	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay 2. Tripping relay 86	Line segment	Charged after opening breaker towards power house fdr from 33kV Gurungdara Substation.
5	11.01.2021	8:57	12.01.2021	11:37	2	1.81	66kV Chukha-Phuentsholing Line.(Pling-Gedu section)	Nil	To replace broken Insulator.	Nil	Line segment	Shutdown taken by TMD, BPC, Phuentsholing for replacing of broken insulators at PC-1 to PC-6 at Kabreytar cluster area as per shutdown approval request on dt: 22.12.2020.
6	12.01.2021	11:26	12.01.2021	11:28	0	0.54	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay R-phase 2. Tripping relay 86	Line segment	Test charged and hold normal.
7	26.01.2021	10:16	26.01.2021	10:18	0	0.51	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay R-B phase 2. Tripping relay 86	Line segment	Test charged and hold normal.
8	26.01.2021	10:25	26.01.2021	10:28	0	0.51	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay R-B phase 2. Tripping relay 86	Line segment	Test charged and hold normal.

(E) 66/33/11 kV Gomtu Substation												
1	25.01.2021	08:36				5.19	66kV Pling feeder	Nil	Replacement of old insulator and ROW clearance	Nil	Location PP#20 to PP#40	Replacement of old disc with polymer and clearing RoW/location/bench cutting. Line still under shutdown
(A) 66kV Chumdu switching station												
1	18.01.2021	09:55hrs	18.01.2021	10:10hrs	15min	0.20MW	66kV Chukha fdr	Fed from 66kV Jemina IC	transient fault	CB open, G-trip	Chukha PH	
(B) 66/33kV Watsa Substation												
1	15/01/2021	15:20hrs	15/01/2021	15:24hrs	4min	.350MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH, EF and EFH relay operated	OC, OCH, EF and EFH relay operated	Fdr. I wanakha	Test charge at 15:21hrs and line got hold and again after 1 min line got tripped and breaker charged after opening Fdr. Isolator.
2	18/01/2021	9:55hrs	18/01/2021	10:06hrs	11min	.490MW	66KV Incommer	Fdr. I and II	Relay L23 got tripped at chukha end	Relay L23 got tripped at chukha end	66KV Incommer	66KV supply fail fro chukha end
3	21/01/2021	00:12hrs	21/01/2021	00:18hrs	6min	.250MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH and EF	OC, OCH and EF and EFH relay operated B phase	Fdr. II chapcha	Test charged at 00:12hrs but line could not hold, again test charged after keeping Fdr. I wanakha line open but line could not stand and finally line charged after oprning isolator of Fdr. II chapcha
4	24/01/2021	11:45hrs	24/01/2021	11:46hrs	1min	.430MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH, EF and EFH	OC, OCH and EF and EFH relay operated B phase	Fdr. I wanakha	The breaker got tripped several times(Transient fault) and Fdr. I wanakha kept open to segregate fault and breaker had not tripped.
5	24/01/2021	12:20hrs	24/01/2021	12:21hrs	1min	.190MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH, EF and EFH	OC, OCH and EF and EFH relay operated B phase	Fdr. I wanakha	Breaker charged after opening of Fdr. I Wanakha and inform to ESD personal
6	24/01/2021	13:31hrs	24/01/2021	13:33hrs	2min	.350MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH, EF and EFH	OC, OCH and EF and EFH relay operated B phase	Fdr. I wanakha	Breaker tripped as ESD betikha had closed LBS of Betikha and breaker charged again after opening of Fdr. I Wanakha
7	27/1/2021	14:54hrs	27/1/2021	14:57hrs	3min	.390MW	66KV SF6 Breaker	Fdr. I and II	OC, OCH, EF and EFH	OC, OCH and EF and EFH relay operated B phase	Fdr. I wanakha	As it was transient fault breaker had been tripped 3 times and Fdr. I kept open and charge the breaker
(C) 66/33kV Olakha Substation												
1	1/1/2021	4:13	1/1/2021	4:15	2	4.4	66/33kV 20MVA, Transformer I	All the 33kV Outgoing feeders got effected as the 33kV Incomer I&II got tripped on same time	Cable Flash Over	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Optd.DIR.O/C& E/F PROT.N.RELAY 67..Trip Relay 86.	RICB Thimphu	The Transformer was tripped due to flash over of 11kV Incomer Cable at RIBC Thimphu as confirmed by the ESD Personal .Test charged the Transformer & hold normal
2	1/1/2021	4:34	1/1/2021	4:35	1	4.4	66/33kV 20MVA, Transformer I	All the 33kV Outgoing feeders got effected as the 33kV Incomer I&II got tripped on same time	Cable Flash Over	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Optd.DIR.O/C& E/F PROT.N.RELAY 67..Trip Relay 86.	RICB Thimphu	As per the information received from ESD Thimphu, The Incomer was tripped due to flash over of 11kV incomer cable at RIBC Thimphu. Test charged the Transformer & hold normal
3	1/1/2021	4:50	1/1/2021	4:52	2	4.4	66/33kV 20MVA, Transformer I	All the 33kV Outgoing feeders got effected as the 33kV Incomer I&II got tripped on same time	Cable Flash Over	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Optd.DIR.O/C& E/F PROT.N.RELAY 67..Trip Relay 86.	RICB Thimphu	As per the information received from ESD Thimphu, The Incomer was tripped due to flash over of 11kV incomer cable at RIBC Thimphu. Test charged the Transformer & hold normal
4	1/21/2021	0:03	1/21/2021	0:05	2	-14.8	66kV Olakha-Semtokha	66kV Blackout as there is no supply from Changidaphu Substation		DISTANCE PROT.N RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optd. 4.Zone2 Optd. 12.LBB Optd. Trip relay-86	Line Segments	Reset the relay and test charge the 66kV incomer and stood normal
5	1/21/2021	8:56	1/21/2021	8:59	3	-22	66kV Olakha-Semtokha	66kV Blackout as there is no supply from Changidaphu Substation		DISTANCE PROT.N RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optd. 4.Zone2 Optd. 12.LBB Optd. Trip relay-86	Line Segments	Reset the relay and test charge the 66kV incomer and stood normal
6	1/21/2021	9:35	1/21/2021	9:39	4	-19	66kV Olakha-Semtokha	66kV Blackout as there is no supply from Changidaphu Substation		DISTANCE PROT.N RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optd. 4.Zone2 Optd. 12.LBB Optd. Trip relay-87	Line Segments	Reset the relay and test charge the 66kV incomer and stood normal with closing code 1167 from NLDC.

(F) 66/33/11kV Jemina Substation											
20.01.2021	8:58	20.01.2021	9:03	5	Chumdo: 3.78 C/daphu: -6.33	66 kV Chumdo line & 66 kV C/daphu line	Black out	Over Current	Start I>1	Line segment	Non directional O/C operated, Auto reclose lock out & distance protection optd. Indicated. Upon test charging at 09:03 Hrs, both the line stood normal.
20.01.2021	20:50	20.01.2021	20:54	4	Chumdo: 2.25 C/daphu: -6.72	66 kV Chumdo line & 66 kV C/daphu line	Black out	Over Current	Start I>1	Line segment	Non directional O/C operated, Auto reclose lock out & distance protection optd. Indicated. Upon test charging with system code: 1163 at 20:54 Hrs, both the line stood normal.
21.01.2021	9:36	21.01.2021	9:38	2	Chumdo: -3.03 C/daphu: 0.33	66 kV Chumdo line & 66 kV C/daphu line	Black out	Distance protection operated	Started phase BC	Line segment	Distance protection optd. & Auto reclose lockout, Started phase BC, Tripped phase ABC, Trip Zone I, fault location: 6.132 KM & 6.112 KM, Chumdo & C/daphu respectively. Upon test charging at 09:38 Hrs, both the line stood normal.
21.01.2021	11:25	20.01.2021	11:27	2	4:33	66 kV Chumdo line	Black out	Distance protection operated	Started phase AC	Line segment	Distance protection optd. & Auto reclose lockout, Started phase AC, Tripped phase ABC, Trip Zone I, fault location: 6.789 KM. Upon test charging at 11:27 Hrs with the code 1169, the line stood normal.
21.01.2021	11:25	20.01.2021	11:30	5	_ 5.31	66 kV C/daphu line	Black out	Distance protection operated	Started phase AC	Line segment	Distance protection optd. & Auto reclose lockout, Started phase AC, Tripped phase ABC, Trip Zone I, fault location: 6.616 KM. Upon test charging at 11:30 Hrs with the code 1170, the line stood normal.
(H) 66/11kV Haa Substation											
05.01.2021	13:33	05.01.2021	13:39	06minutes	-2.36	66kV Incomer	All the feeders	Unknown	O/C	Pangbesa s/s	Incomer tripped from Pangbesa substation on over current. Supply was resumed further,after informing the concern person.
21.01.2021	11:39	21.01.2021	11:52	14minutes	1.29	5MVA Tr- II	Incomer - II & Tr-II	To fill up the SF6 gas	Nil	Haa S/s	5MVA transformer - II was taken shutdown by substation Head to fill up the SF6 gas. The same was energised after completing the work.
(J) 66/33/11kV Pangbesa substation											
05.1.2021	13.36Hrs	05.1.2021	13:39Hrs	3	2.21	66kV OG to Haa	66kV OG to Haa	O/C	Distance relay	Pangbisa-Haa	
(K) 66/33kV Changidaphu Substation											
20.012.021	857hrs	20.012.021	1213hrs	16.00	1.017	66KV Cgangidaphu	66KV Cgangidaphu		Distance Protection.		zone:1(R.Y.B phase)
20.012.022	2050hrs	20.012.022	2059hrs	9.00	6.120	66KV Cgangidaphu	66KV		86trip(A and B)		
20.012.023	857hrs	20.012.023	1213hrs	16.00	1.017	66KV Cgangidaphu	66KV		Distance Protection.		

February 2021

Tripping report of 66kV and above feeders for the month of February, 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Remarks
(B)66/33/11 kV Phuntsholing Substation												
1	06.02.2021	14:48	06.02.2021	14:53	0	0.12	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder		Dist Prot OPTD, Fault imp- 6.40, fault angle- 54 deg, fault current-0.359Amp, location-5.93KM, 34.5% & 86 relay.	Line	At 14:48hrs 66kV Chukha-Pling feeder got tripped on both the end. At 14:51hrs normalised the feeder.
(D) 66/33/11 kV Gedu Substation												
1	06.02.2021	14:48	06.02.2021	14:53	0	2.34	66kV Chukha-Phuntsholing fdr.	Black out	Lightning and thundering.		Line segment	Tripped from Chukha end.
2	06.02.2021	15:43	06.02.2021	15:44	0	0.49	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay R-B phase 2. Tripping relay 86	Line segment	Test charged and hold normal.
3	18.02.2021	12:31	18.02.2021	12:33	0	0.41	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer.	1. Differential relay R-B phase 2. Tripping relay 86	Line segment	Test charged the transformer but it didn't hold. Informed to Mr. Tshering Penjor JE ESSD. Received information of tree fall on the 11kV Mirching fdr of Gurungdara substation. The Mirching fdr kept on tripped condition at Gurungdara substation and charged the 33kV Gurungdara fdr I at 12:44hrs and stood normal.
(E) 66/33/11 kV Gomtu Substation												
1	04.02.2021	09:51	04.02.2021	13:34	3	2.98	66kV Gomtu-P/ling	Nil	Oil leakage from CT	Nil	Phuntsholing Sub Station	For arresting oil leakage from CT Y phase
(F) 220/66/33 kV Dhamdum Substation												
1	19.02.2021	8:00	21.02.2021	19:45	11		220 kV Buscoupler	N/A	N/A	CB SF6 0/LCB TC Trouble, CB faulty	Damdum yard, Breaker of 220kV buscoupler.	Due to chattering sound on the breaker of 220kV buscoupler, we have avail shutdown from the BPSD on the request of our substation head. The shutdown code No. 0167 is issued by Mrs. Phub Zam. The feeder was charged at 19:50hrs against charging code 1329
(B) 66/33kV Wanaka Substation												
1	14/2/2021	08:00hrs	14/2/2021	10:31hrs	1hr	.272MW	Feeder I Wanaka	Feeder I Wanaka	O/C, OCH on ABC phase	O/C, OCH on ABC phase operated	Tree fallen on 33kV line at wanaka as per ESD wanaka	
(G) 66/33/11kV Dechencholing substation												
1	2/9/2021	14:22Hrs	2/11/2021	14:27Hrs	71 Hrs	0.293	66KV Gasa fdr.	Nil	Tripped due to over current	O/C, B & C phase IA- 42.70A, IB-2.568KA & IC- 2.577KA, 86A & 86B	not known	Fdr tripped due to falling of huge tress on the Y & B phase, and damage both the conductor. TMD Glakha ntc team rectified it and recharged the fdr on dated 11.02.2021 at 14:27Hrs.

March 2021

Tripping Report for the month of March 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Remarks
(A) 400/220/66/11 kV Malbase Substation												
1	13.03.2021	16:50	13.03.2021	16:56	0	33	50/63MVA Transformer III	Malbase Substation	Tripped due to fault on Samtse Feeder.	Differential trip		IL1=7.28A<128.9deg, IL2=143.65A<-135.55deg, IL3=70.14A<159.48deg. (Note, weather conditions were heavy rainfall, lightning, thundering and heavy wind).
2	13.03.2021	16:50	13.03.2021	16:57	0	10	220kV Malbase -Samtse Feeder	Malbase & Samtse Substation	Tripped due to Overcurrent and Earthfault	Distance protection operated and O/C protection operated.		Fault data from IDMTL Relay: G1 Phase A (FWD) IDMTL<HS1> IA =3009A, Phase B <FWD> IB= 9B 19A, Phase c <FWD> IC = 3264A, Earthfault <REV> IE=2686A (Note, weather conditions were heavy rainfall, lightning, thundering and heavy wind).
(B)220/66/11 kV Singhigoan Substation												
1	13.03.2021	16:50	13.03.2021	17:08	0	3	220kV Singhigoan -Samtse Feeder.	Singhigoan GIS & Samtse Feeder	Tripped due to Overcurrent and Earthfault	Distance protection operated and 86 operated.		IL1=2803A, IL2=75.79A, IL3=2765A, IE=2042A.
(B)66/33/11 kV Phuntsholing Substation												
1	05.03.2021	18:27	05.03.2021	18:33	0	0.14	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder	Distance Protection	Dist Prot OPTD, Fault imp- 7.9, fault angle- 51 deg, fault current- 2.617Amp, location- 40.9% & 86 relay.	Line	At 18:27hrs 66kV Chukha-Pling feeder got tripped on both the end. At 14:51hrs normalised the feeder. Weather condition was lightning and raining during the time of tripping.

(D) 66/33/11 kV Gedu Substation												
1	05.03.2021	18:26	05.03.2021	18:33	0	3.19	66kV Chukha-Phuntsholing fdr.	Black out	Lightning thundering & raining		Line segment	Tripped from Chukha end.
(E) 66/33/11 kV Gomtu Substation												
1	04.02.2021	09:51	04.02.2021	13:34	3	2.98	66kV Gomtu-P/ling	Nil	Oil leakage from CT	Nil	Phuntsholing Sub Station	For arresting oil leakage from CT Y phase
(F) 220/66/33 kV Dhamdum Substation												
1	13.03.2021	16:50	13.03.2021	17:04	0	-2.83	220kV Singhigoan	N/A	Over current	REL 670 MAIN 1- General trip.Zone 1, Rand Bphase fault.	N/A	Trip values. IL1- Fault mag- 207.78A, Fault angle--88.76deg. IL2- Fault mag-91.40A, Fault angle- -10.80deg. IL3- Fault mag- 347.06A, Fault angle- -.64deg.
(B) 66/33kV Watsa Substation												
1	7/3/2021	10:10hrs	7/3/2021	10:13hrs	0	.480MW	66kV Incomer	Fdr. I and II	Olakha fdr. Got tripped at chukha	66kV fall from chukha end as olakha fdr. Got tripped at chukha end		
(C) 66/33kV Olakha Substation												
1	3/7/2021	8:40	3/7/2021	8:42	0	-26.6	66kV Sentoikha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTIN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Opted. 4.Zone2 Opted. 12.LBB Optd.Trip relay-86		66kV Sentoikha-Olakha line was tripped on distance protection relay Zone 2.Reset the relay and charged the 66kV incomer and stand normal.
2	3/7/2021	8:54	3/7/2021	8:55	0	-13.1	66kV Sentoikha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTIN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Opted. 4.Zone2 Opted. 12.LBB Optd.Trip relay-86		66kV Sentoikha-Olakha line was again tripped on distance protection relay Zone 2.Reset the relay and charged the 66kV incomer and stand normal.
3	3/7/2021	9:20	3/7/2021	9:22	0	-21.1	66kV Sentoikha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTIN RELAY-21.Indication 1,2,3&12. 1.General trip. 2.Distance Opted. 3.Zone1 Opted. 12.LBB Optd.Trip relay-86		66kV Sentoikha-Olakha line was tripped on distance protection relay Zone 1.Reset the relay and charged the 66kV incomer as per the instruction received from BPSO and stand normal.
4	3/7/2021	10:24	3/7/2021	10:29	0	-27.7	66kV Sentoikha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTIN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Opted. 4.Zone2 Opted. 12.LBB Optd.Trip relay-86		66kV Sentoikha-Olakha line was tripped on distance protection relay Zone 2.Reset the relay and charged the 66kV incomer as per the instruction received from BPSO and stand normal.
5	3/7/2021	14:26	3/7/2021	14:31	0	-28.3	66kV Sentoikha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTIN RELAY-21.Indication 1,2,3&12. 1.General trip. 2.Distance Opted. 4.Zone2 Opted. 12.LBB Optd.Trip relay-87		66kV Sentoikha-Olakha line was tripped on distance protection relay Zone 2.Reset the relay and charged the 66kV incomer as per the instruction received from BPSO and stand normal.
6	3/30/2021	21:11	30/3/2021	21:13	0	12.2	20MVA Transformer I	All the Outgoing feeders got effected as the 33kV Incomer I & II was tripped.	Due to tripping of 33kV DPH II feeder	Differential Protection Operated. Indication 1,3,4 &5. 1.General trip. 3. Differential trips on Y Phase 4. Differential tripped on B Phase, 5. Differential protection operated		The 66/33kV 20MVA Transformer I was tripped due to tripping of 33kV O/G feeder VI (DPH II)
7	3/30/2021	21:20	30/3/2021	21:21	0	12.2	20MVA Transformer I	All the Outgoing feeders got effected as the 33kV Incomer I & II was tripped.	Due to tripping of 33kV DPH II feeder	Differential Protection Operated. Indication 1,3,4 &5. 1.General trip. 3. Differential trips on Y Phase 4. Differential tripped on B Phase, 5. Differential protection operated		The 66/33kV 20MVA Transformer I was tripped due to tripping of 33kV O/G feeder VI (DPH II)

(D) 66/33/11kV Lobeysa Substation											
1	18.03.2021	09:16hrs	31.05.2021	17:00hrs	1791	2.140	66kV LSA-SEM	NA	NA	NA	66kV LSA -SEM taken shutdown as per the shutdown approval No.10A/BPC/BPSO/PSOD/Vol-1/71 to carry out the re-conducting HTLS Project from Semtokha to Dochula. Supply no interruption feeded from Basochin.
(E) 66/33/11 kV Paro Substation											
1	3/7/2021	10:16	3/7/2021	10:17	0	9.29	66kV Line IN	Tripped from Chumdo	Tripped from Chumdo		
(F) 66/33/11kV Jemina Substation											
1	07.03.2021	8:14	07.03.2021	8:45	0	3.09	66 kV Chumdo	Black out	Distance relay operated, Phase ABC, Zone 1	Dist. Relay, Ph. ABC, Zone 1.	Both the 66 kV lines, Chumdo & Changedaphu tripped on Phase ABC, Zone 1 as shown by operated Distance relay at 08:14 Hrs, the Chumdo line charged at 08:45 Hrs with charging code: 1394.
2	07.03.2021	8:14	07.03.2021	8:47	0	-5.27	66 kV Changedaphu	Black out till 08:45 Hrs	Distance relay operated, Phase ABC, Zone 1	Dist. Relay, Ph. ABC, Zone 1.	Both the 66 kV lines, Chumdo & Changedaphu tripped on Phase ABC, Zone 1 as shown by operated Distance relay at 08:14 Hrs, the Changedaphu line charged at 08:47 Hrs with charging code: 1394.
3	07.03.2021	8:50	07.03.2021	9:00	0	3.09	66 kV Chumdo	Black out	Distance relay operated, Phase ABC, Zone 1	Dist. Relay, Ph. ABC, Zone 1.	Both the 66 kV lines, Chumdo & Changedaphu tripped on Phase ABC, Zone 1 as shown by operated Distance relay at 08:50 Hrs after charging the Changedaphu line at 08:47 Hrs, the Chumdo line charged at 09:00 Hrs after instruction from BPSO.
4	07.03.2021	8:50	07.03.2021	10:10	1	-5.27	66 kV Changedaphu	Black out till 09:00 Hrs	Distance relay operated, Phase ABC, Zone 1	Dist. Relay, Ph. ABC, Zone 1.	Both the 66 kV lines, Chumdo & Changedaphu tripped on Phase ABC, Zone 1 as shown by operated Distance relay at 08:50 Hrs, after charging the Changedaphu line at 08:47 Hrs, the Changedaphu line was kept open, however, again at 10:10 Hrs, with the charging code: 1395 from BPSO, the Changedaphu line was charged, but the line could not hold and tripped along with 66 kV Chumdo. Thereafter, the Changedaphu line kept open.
5	07.03.2021	10:10	07.03.2021	10:16	0	-2.97	66 kV Chumdo	Black out	Distance relay operated, Phase ABC, Zone 1	Dist. Relay, Ph. ABC, Zone 1.	Both the 66 kV lines, Chumdo & Changedaphu tripped on Phase ABC, Zone 1 as shown by operated Distance relay at 10:10 Hrs after charging the Changedaphu line at 10:10 Hrs, the Chumdo line charged at 10:16 Hrs after instruction from BPSO.
(I) 220kV Substation Semtokha											
1	3/18/2021	0915hrs				-2.040	no interruption	shut down taken by Mr. Kinley Wangchuk (project manager) for re-conducting HTLS line for new bay at Semtokha S/S			
(J) 66/33/11kV Pangbesa substation											
	Nil										
(K) 66/33kV Changidaphu Substation											
1	3/7/2021	814hrs	3/7/2021	851hrs	0.00	5.230	66kV Jemina to Changidaphu	Changidaphu	Covering of Insulator by Snow/Ice	Distance Protection	
2	3/7/2021	1104hrs	3/18/2021	1031hrs	263.00	5.230	66kV Jemina to Changidaphu	Changidaphu	Covering of Insulator by Snow/Ice	Distance Protection	
3	3/7/2021	854hrs	3/7/2021	1105hrs	2.00	-0.990	66kV Olakha to Changidaphu	Olakha	Covering of Insulator by Snow/Ice	Only 86 Relay Operated	

April 2021

Tripping report of 66kV and above feeders for the month of April, 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
1	22.04.2021	12:40	22.04.2021	13:08	0	27	400kV Siliguri Feeder	Siliguri Substation	Transient fault	Main I & 86A B optd.			IL1=376.9A<100.1deg, IL2=256A<47.17deg, IL3=1613A<90.29deg, IL4= 4342A< 87.05deg (Note: weather conditions were light rainfall with lightning).
2	22.04.2021	12:40	22.04.2021	12:48	0	0	220kV Bus coupler	Malbase Substation	Transient fault	ID> trip, 86 optd.			Earthfault. (Note: weather conditions were light rainfall with lightning).
(B) 220/86/11 kV Singhigoan Substation													
1	22.04.2021	12:40	22.04.2021	12:47	0	5.1	66kV Bhutan Concat fdr.	Singhigoan GIS	Tripped due to Overcurrent	Directional overcurrent trip, IEp Trip, 86 optd			IL1=0.11kA, IL2=0.02kA, IL3=0.09kA.
2	22.04.2021	12:40	22.04.2021	12:48	0	0	66kV Main Bus I	Singhigoan GIS	Tripped due to Overcurrent	O/C Trip, General Trip, 86 optd			IL1=0.22kA, IL2=0.26kA, IL3=0.04kA.
(B) 66/33/11 kV Phuntsholing Substation													
1			13.04.2021	9:05	9	idle	66kV Malbase- Pling feeder	66kV Malbase- Pling feeder					At 09:05hrs charged 66kV Pling- Malbase feeder which was under idle condition with charging code 1949 from BPSO (for supply reliability at Pling Ss). since 66kV Chukha-Gedu section was taken shutdown by TMD, Thimshaling for carrying out annual maintenance on 66kV chukha-Gedu section (i.e replacement of insulator with glass and polymer). On dated 18.04.2021 at 17:50hrs opened CB of 66kV Pling- Malbase feeder with opening code 0413 from BPSO and again the feeder was kept under idle condition.
2	22.04.2021	3:07	22.04.2021	3:16	0	9.00	66kV Pling- Gomtu feeder	66kV Pling- Gomtu feeder	Tripped	DSTN OPTD, 186&86	Line		At 03:07hrs 66kV Pling- Gomtu feeder got tripped at our end and 66kV Chukha- Pling feeder got tripped at Chukha end causing black-out at Phuntsholing. Weather condition was raining with lightning during the time of tripping. At 03:10hrs charged 66kV Malbase- Pling feeder after informing BPSO. At 03:16hrs normalised 66kV Pling- Gomtu feeder after getting clearance from BPSO. At 03:35hrs opened CB of 66kV Pling- Malbase feeder with opening code 0433 from BPSO and again the feeder was kept under idle condition.

(E) 66/33/11 kV Gomtu Substation													
1	22.04.2021	03:09	22.04.2021	03:33	0	-7.57	66kV Incomer Dandum & Gomtu-Phuntsholing	Gomtu Substation	Transient fault	General trip Zone-4 trip R.ph. Fault	Line segment	Transient Fault	66kV Phuntsholing supply resumed at 3:16 hrs. 66kV Dandum feeder charged after informing to BPSO and Dhandum Substation.
(F) 220/66/33 kV Dhandum Substation													
1	22.04.2021	3:07	22.04.2021	3:33	31	7.7	66 kV Gomtu fdr	N/A	Tripped	N/A	-	N/A	66kV Gomtu fdr tripped on B phase fault at 3:07HRS.
Tripping Report for the month of APRIL, 2021													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 66kV Chumdu switching station													
(B) 66/33kV Warsa Substation													
(C) 66/33kV Olakha Substation													
1	08/04/2021	10:40	08/04/2021	12:43	0	7.7	66kV Olakha-Changidaphu Line	Olakha substation	Due to fault at Dechencholing line	Distance protection relay 21 operated. Indication 1 (general trip)	66kV Gasa line from Dechencholing	Transient Fault	The Supply was fail from Sentokha due to fault at 66kV Dechencholing to Gasa Line as information received from BPSO and shift duty of Sentokha Substation.
4	19/04/2021	11:58	19/04/2021	12:10	0	5	66kV Olakha-Changidaphu Line	Olakha Substation	Under voltage	Only Trip relay 86 Operated	Olakha Substation	Temporary	The supply was fail due to under voltages. Reset all the relays and charged the feeder, hold normal.
5	4/2/2021	1:40	4/2/2021	1:42	0	3.3	20MVA Transformer I	Only 33kV Chubacha feeder IV was effected as the other feeders was fed from Transformer II	Due to tripping of 33kV Chubacha feeder (Fdr.IV)	TRAFD DIFFL. PROTIN. RELAY 87 Indication: 1,3,4 & 5. 1. General Trip, 3. Diff Trip Y.ph.4.Diff Trip B.ph.5. Diff Prot.Opt.DDR, O/C & E/F PROTIN.RELAY 67.Trip Relay 86.	Line Segment	Transient Fault	The 66/33kV 20MVA Transformer I was tripped due to tripping of 33kV O/G feeder IV (Chubacha).Charged the feeder and hold normal.
6	4/2/2021	13:15	4/2/2021	13:37	0	8.80	20MVA Transformer I	Only 33kV Chubacha feeder IV was effected as the other feeders was fed from Transformer II	Due to tripping of 33kV Chubacha feeder (Fdr.IV)	TRAFD DIFFL. PROTIN. RELAY 87 Indication : 1,3,4 & 5. 1. General Trip ,3. Diff Trip Y.ph.4.Diff Trip B.ph.5. Diff Prot.Opt... Trip Relay 86.	Line Segment	Transient Fault	66/33kV 20MVA Transformer I tripped due to tripping of 33kV O/G IV (Chubacha feeder).Charged the feeder after confirmation and clearance received from ESD personal and hold normal.
(D) 66/33/11kV Lobeysa Substation													
1	26.04.2021	20:19hrs	26.04.2021	21:45hrs	1	-9.450	66kV LSA-Basochu	Lobeysa substation	Basochu machine tripped.	NA	Basochu Plant	NA	66kV LSA -Basochu feeder tripped at 20:19hrs from Basochu end and No relay& breaker operated at our end.Supply resumed at 21:45hrs from Basochu end.
2	26.04.2021	23:05hrs	27.04.2021	00:21hrs	1	-7.020	66kV LSA-Basochu	Lobeysa substation	Basochu machine tripped.	NA	Basochu Plant	NA	66kV LSA -Basochu feeder tripped at 23:05hrs from Basochu end and No relay& breaker operated at our end.Supply resumed at 00:21hrs from Basochu end on 27.04.2021.
(E) 66/33/11 kV Paro Substation													
Nil													
(F) 66/33/11kV Jemina Substation													
Nil													
(G) 66/33/11kV Dechencholing substation													
1	4/8/2021	10:47Hrs	4/8/2021	11:08Hrs	0	3.113	Both 10MVA Tr.	Whole o/g fdr.	Due to insulator Puncture/broken	only 86 relay	Opposite of Dling S/S, 66kVline Sentokha to Dling incomer fdr.	Tripped	Sound came out like boom blast from opposite of our substation from double circuit tower, later we have found out that one side of double stringing insulator was puncture/broken due to low rating. 66kV incomer line tripped from sentokha end. however,both 10MVA Tr. are tripped at our end.
(H) 66/11kV Haas Substation													
1	01.04.2021	11:28	01.04.2021	11:39	0	-2.28	66kV Incomer, along with all the feeders.	unknown	O/C	Pangbesa substation,Paro	66kV incomer tripped from Pangbesa substation on overcurrent. The same was normalised further.		
2	09.04.2021	14:07	09.04.2021	14:10	0	-1.8	66kV Incomer, along with all the feeders.	unknown	O/C	Pangbesa substation,Paro	66kV incomer tripped from Pangbesa substation on overcurrent. The same was normalised further.		

(I) 220kV Substation Sautokha												
1	08.04.2021	10:44hrs	08.04.2021	10:52hrs	0.00	21.560	50MVA Transformer 1	220kV Sautokha Substation	R phase Insulator panned above Dechencholing	HV and LV Backup protection Optd. (HV: Ia=287.2A, Ib= 61.27A, Ic=63.11A) (LV: Ia= 979.7A, Ib=185.2A, Ic= 195.4A)	220kV Sautokha Substation	Transient
2	08.04.2021	10:44hrs	08.04.2021	10:45hrs	0.00	21.610	50MVA Transformer 2	220kV Sautokha Substation	R phase Insulator panned above Dechencholing	HV and LV Backup protection Optd. (HV: Ia=155.1A, Ib= 112.5A, Ic=84.46A) (LV: Ia= 509.5A, Ib=386.3A, Ic= 281.4A)	220kV Sautokha Substation	Transient
3	28.04.2021	12:10hrs	28.04.2021	12:14hrs	0.00	17.870	50MVA Transformer 1	220kV Sautokha Substation	Due thunder and lightning Dechencholing line tripped and simultaneously both 50MVA tripped.	Differential protection optd. HV and LV Backup protection Optd.	220kV Sautokha Substation	Transient
4	28.04.2021	12:10hrs	28.04.2021	12:13hrs	0.00	17.900	50MVA Transformer 2	220kV Sautokha Substation	Due thunder and lightning Dechencholing line tripped and simultaneously both 50MVA tripped.	Differential protection optd. HV and LV Backup protection Optd.	220kV Sautokha Substation	Transient
5	08.04.2021	10:44hrs	08.04.2021	10:59hrs	0.00	6.850	66kV Sautokha-Dechencholing Feeder	220kV Sautokha Substation & 66kV Dechencholing Substation	R phase Insulator panned above Dechencholing	Ia>> Trip Ia= 1.951kA, Ib=56.87A, Ic=45.23A		Permanent
5	28.04.2021	12:10hrs	28.04.2021	12:21hrs	0.00	7.420	66kV Sautokha-Dechencholing Feeder	220kV Sautokha Substation & 66kV Dechencholing Substation	R phase Insulator panned above Dechencholing	Distance Protection Optd. Ia>> Trip Ia= 3.318kA, Ib=74.6A, Ic=62.66A		Transient
(J) 66/33/11kV Pangbesa substation												
1	02.04.2021	11:33hrs	02.04.2021	11:39hrs	0	2.21	66kV OG Has feeder	Has	O/C			Transient
2	09.04.2021	14:07hrs	09.04.2021	14:10hrs	0	1.74	66kV OG Has feeder	Has	O/C			Transient
(K) 66/33kV Changjapha Substation												
(L) 66/33kV Danji Substation												
1	08.04.2021	10:48hrs	11.04.2021	3:40hrs	76	-0.29	6/33kV Incoming line	Failure of insulator	NA			66kv incoming line was tripped at 10:48 hrs and line at Danji Substation had been back feed from Panakha at 14:07 hrs. 66kv line charged at 15:40 hrs as per the closing code 1961 from BPSO.
2	28.04.2021	12:14hrs	28.04.2021	12:27hrs	0	-0.29	6/33kV incoming line	Hand trip	NA			66kv line breakdown (Hand trip) from Sautokha

May 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/Lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
66kV & Above													
1	03.05.2021	10:25	03.05.2021	13:48	3	-44	220kV Chukha-Malbase Feeder 3	Malbase s/s	Overcurrent	zone 1 trip, 86 operated, fault loop L2-N, distance at 10.97 km	L2-N=10.97 km	Overcurrent fault	Ia = 68.66 A, Ib=5.381kA, Ic=157A
2	3.05.2021	13:25	03.05.2021	15:02	1	23	50/63 Mva Trafo 3	Malbase S/S	Overcurrent	Differential trip, 27 Trip, 86 operated, harm BLK trip		Overcurrent fault	R phase=148.22A/6.70deg, Y phase=708.52A/1.90deg, B phase=89.23A/72.53 deg, N=229.97A/175.10deg
3	03.05.2021	14:50	03.05.2021	14:58	0	10	220kV Malbase-Samtse Feeder	Dharmdu S/s	Earth fault	Main 1 trip, zone 1 trip, B/U trip, 86 operated, fault loop-L1-N, distance at 18.8 km	fault loop- L1-N=18.8 km	Overcurrent fault	R phase=4308A/283.8deg, Y phase=55.02A/116.5deg, B phase=108.4A/109.8deg, N=6141A/283.9deg
4	3.05.2021	15:01	03.05.2021	15:52	0	9	220kV Malbase-Samtse Feeder	Dharmdu S/s	Earth fault	Main 1 trip, zone 1 trip, B/U trip, 86 operated, fault loop-L1-N, distance at 16 km	fault loop- L1-N=16 km	Overcurrent fault	R phase= 4608A/283.8deg, Y phase= 54.84A/119.2deg, B phase= 107.2A/111 deg, N=4447A/ 283.6deg
5	03.05.2021	0:22	03.05.2021	0:31	0	7	220kV Malbase-Samtse Feeder	220kV samtse feeder	Overcurrent	Rel 51 L overcurrent protection operated, distance protection operated, Main 1 trip, Trip R, Y, B phase, zone 1 trip		Overcurrent fault	67/67 N, G1 phase A FWD IDMT I(HE) Ia=3952A, Ib= 135.7A, Ic FWD IDMT I(HE) =1924A, E.F (REV) Ia=3376A
6	04.05.2021	1:00	04.05.2021	1:15	0	16	66 kV Pasakha Feeder 1	66kV pasakha feeder 1	Overcurrent	Rel 670 JEF-50N trip, 86 operated, general trip, IOC 50 trip		Overcurrent fault	R phase= 2316.17+43.77deg, Y phase= 1997.79A+175.7deg, B phase= 1887.64A+53.59 deg, N=832.07A+164.16deg
7	04.05.2021	1:00	04.05.2021	1:15	0	20	66 kV Pasakha Feeder 2	66kV pasakha feeder 2	Overcurrent	Rel 670.51 start, 86 operated, IOC 50 trip, general trip, IEF 50N trip		Overcurrent fault	R phase=3233.90A+70.75deg, Y phase= 2128.21A+173.04deg, B phase= 525.15A+86.90 deg
8	04.05.2021	1:00	04.05.2021	1:15	0	21	66 kV Pasakha Feeder 4	66kV pasakha feeder 4	Overcurrent	Rel 670.51 start, 86 operated, IOC 50N trip, general trip, IEF 50N trip		Overcurrent fault	R phase= 3345A+66.27deg, Y phase= 3948.39A+164.22deg, B phase= 5860.2A+35.05 deg
9	11.05.2021	10:17	12.05.2021	12:43	18	72	200 MVA ICT Malbase S/s	Malbase S/S	Backholz Trip	86 phase buchholz alarm, buchholz trip, 86 Relay trip	ICT B phase transformer		L1=0.092 A<13.83 deg, L2=0.022 A<140.4 deg, L3=0.007 A/<6.15 deg
(B) 220/66/11 kV Singhigoan Substation													
1	03.05.2021	15:11	03.05.2021	16:03	0	3.5	220kV Singye Samtse	GIS, Singhigoan s/s	Overcurrent			overcurrent trip and 86 otpd.	Overcurrent Fault
(B) 66/33/11 kV Phuntsholing Substation													
1	03.05.2021	13:37	03.05.2021	15:00	1	-2.26	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder					DSTN OPTD, 186&86
2			03.05.2021	13:42	13		idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder				
3	03.05.2021	15:12	03.05.2021	15:18	0	-4.60	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder					DSTN OPTD, 186&86
4	05.05.2021	13:56	05.05.2021	14:04	0	-3.09	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder					DSTN OPTD, 186&86
5	05.05.2021	13:56	05.05.2021	15:41	1	-1.48	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder			Tripped		DSTN OPTD, 186&86
6			05.05.2021	14:01	14		idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder				
7	14.05.2021	0:42	14.05.2021	0:48	0	-3.83	66kV Chukha-Pling feeder	66kV Chukha-Pling feeder					DSTN OPTD, 186&86

Annual Transmission System Performance Report | 2021

66/33/11 kV Gedu Substation													
1	03.05.2021	13:37	3.05.2021	14:15	0	1.73	66kV Chokha-Phuntsoling	Black out	Due to bad weather		Line segment	Weather condition: Heavy Rainfall. 66kV line was charged from Chokha after improving the weather condition.	
2	03.05.2021	15:10	03.05.2021	15:18	0	1.73	66kV Chokha-Phuntsoling	Black out	Due to bad weather		Line segment	Weather condition: Heavy Rainfall. 66kV line was charged from Chokha after improving the weather condition.	
3	08.05.2021	10:12	10.05.2021	20:33	10	0.44	8MVA 66/33kV Tye-III	33kV Gurungdara feeder-I and II	33kV Supply extended from 33kV Gurungdara-I		Substation	Shutdown Taken shutdown for installation and commissioning of 33kV Bus section-II panels vide work permit No. 39 issued to Mrs. Rinchen Zangmo, Sr. Engineer of S&D P/ing.	
4	10.05.2021	9:26	10.05.2021	9:58	0	0.4	8MVA 66/33kV Tye-4	33kV Gurungdara feeder-I	Bad weather	Differential fault on R phase	Line segment	Weather Condition: Thundering and Raining. Test charged after weather got clear and stood normal.	
5	14.05.2021	0:42	14.05.2021	0:46	0	1.54	66kV Chokha-Phuntsoling line		Black out	Due to bad weather	Line segment	Weather condition: Raining and thundering. 66kV line charged from Phuntsoling end.	
6	19.05.2021	16:45	19.05.2021	16:55	0	0.55	8MVA 66/33kV Tye-4	33kV Gurungdara feeder-4 & 33kV Gurungdara-II	REF	REF	Line segment	Test charged and hold normal.	
7	20.05.2021	15:33	20.05.2021	15:42	0	0.41	8MVA 66/33kV Tye-4	33kV Gurungdara feeder-I	REF	REF	Line segment	Test charged and hold normal.	
66/33/11 kV Gomtu Substation													
1	03.05.2021	15:11	03.05.2021	15:18	0	-9.584	66kV Dhamdum	Gomtu Substation	Nil	Nil	Maltase Substation	Tripped on Fault	66kV supply tripped from Maltase Sub Station.
2	04.05.2021	12:32	04.05.2021	19:54	7	-7.029	66kV Dhamdum	Nil	Over Current	General trip, Zone-4 trip, R ph fault, Y ph fault, B ph fault, VT fuse fail.	66kV Samtse-Gomtu Line	Tripped on Fault	66kV Dhamdum tripped due to rainstorm and supply could not withstand from the both end thereby test charged informing to BPSO at 07:54 hours and the line withstand.
3	05.05.2021	13:59	05.05.2021	14:08	0	-10.734	66kV Dhamdum & Gomtu-Phuntsoling	Whole Gomtu	Over Current/Transient Fault	General trip, Zone-4 trip, R ph fault, Y ph fault, B ph fault	66kV Samtse-Gomtu Line	Tripped on Fault	66kV Dhamdum tripped due to rainstorm. Supply charged with confirmation from BPSO at 14:08 hours. 66kV Gomtu-Phuntsoling supply resumed at 15:41 hrs.
66/33/11 kV Dhamdum Substation													
1	03.05.2021	15:11	3.05.2021	16:04	0	-3.19	Siagaypaang Dandum Feeder	Dandum S/S	Transient fault	REL670(21L-M1)	6.5 KM	Line fault	L1 & N Fault, Fault distance 6.5 Km, Zone -1 fault.
2	04.05.2021	0:21	04.05.2021	0:35	0	-1.93	Siagaypaang Dandum Feeder	Dandum S/S	Transient fault	REL670(21L-M1)	20 KM	Line fault	Line tripped due to heavy rain/fall and lightning and thunder. Line fault record as under: Zone 1, 4 phase to phase fault (R to B) Distance/fault location 20.1KM (50.3%)
66kV													
1	04.05.2021	0:36	04.05.2021	7:29	6	7.32	Gomtu feeder	NA	Heavy rainfall and lightning and thunder	REL670(21L)	NA	Line fault	Line tripped due to heavy rainfall and lightning and thunder. Line fault record as under: Zone 1, O/C on R & B fault, 1) Abs Dist: 19.99 2) Fault Rel Dist: 49.90%, 3) Fault loop L3L1.
2	05.05.2021	13:54	05.05.2021	14:06	0	12.83	Gomtu feeder	NA	Heavy rainfall and lightning and thunder	REL670(21L)	NA	Line fault	Line tripped due to heavy rainfall and lightning and thunder. Line fault record as under: Zone 2&3 started, 1) Fault loop type: L2 with N, 2) Fault location 15KM (100%)
Tripping Report for the month of MAY 2021													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 66kV Chanda switching station													
1	03.05.2021	12:20hrs	03.05.2021	13:25hrs		(-5.7MW)	66kV both i/c	Pare and Panglase	Transient fault	O/C & CB open	Chanda	Trip	
2	03.05.2021	13:55hrs	03.05.2021	14:55hrs		(-5.7MW)	66kV Chikha i/c	Pare and Panglase	Fault at Chikha end	CB open	Fault at Chikha end	Trip	Could not charge due to DC failure
(B) 66.2kV Watta Substation													
1	3/5/2021	13:30hrs	3/5/2021	14:08hrs		0.260MW	66kV Incensee	Ph.1 and II	66kV Incensee failed from Chikha end as change relay got triggered			Trip	
2	24/5/2021	9:00hrs	24/5/2021	10:12hrs	1hr	260MW	66kV Incensee	Ph.1 and II	was power taken by TMD Tsimakha for Re jumper at Watta for the 10 days annual maintenance at Chanda			Shutdown	
3	28/5/2021	14:14hrs	28/5/2021	16:24hrs	2hrs	330MW	66kV Incensee	Ph.1 and II	Shut down taken by TMD Tsimakha for Re jumper at Watta for the 10 days annual maintenance at Chanda			Shutdown	

Annual Transmission System Performance Report | 2021

(C) 66/33kV Olakha Substation													
1	5/3/2021	13:48	5/3/2021	13:51	0	6.5	20 MVA transformer I	Olakha substation and all outgoing feeders				Supply fail from Chitkha (unit fail) supply fail from Chitkha at 13:38hrs and charge at 14:08hrs.	
2	5/9/2021	16:22				4.5	66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line		IT park near Serbitang		The 66kV Olakha-Changidaphu was tripped on distance relay, so the 66kV line was not charged owing to the indication and operation of relay. Operational personnel has seen that there was spark near the Gantry of Y Phase conductor during tripping happen, therefore informed to BPSO in this regard. Since patrolling could not proceed due to time constraint, The 66kV line was kept under shut down. For next day Patrolling by TMD line person.	
3	5/9/2021	16:22	5/9/2021	17:24	1		66kV Bus Coupler	Olakha Substation				Supply fail from 66kV Sentsokha Line and 66kV Changidaphu Line	
4	5/9/2021	16:52	5/9/2021	17:21	0	-16.8	66kV Sentsokha-Olakha line	Olakha substation and all outgoing feeders				Supply fail from 66kV Sentsokha Line and 66kV Changidaphu Line	
5	5/11/2021	15:52	5/11/2021	15:53	0	-13.7	66kV Olakha-Sentsokha	Olakha substation and all outgoing feeders				Feeder was tripped while Test charging of 66kV Olakha-Changidaphu feeder which was under shutdown for changing of 3 phase Conductor between death end tower and 66kV gantry at Olakha substation. After resetting all relays, test charge the feeder and hold normal.	
6	5/11/2021	15:52	5/12/2021	17:38	25	4.5	66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line	conductor burnt at IT park		IT park	Shutdown taken by Duplo Wangdi to provide tension fittings for (one open) valley crossing and critical. As per Approval request no. REF/MRO No.18/TMD/TD/BPC/2021/150-1/85 and approved no.10/ABPC/BPSO/PSOD/Vol-1/2021/115. Breaker open, line and bus isolator open and earth switch close at both Olakha and Changidaphu end. BPSO Shutdown code 0497 Shutdown was resumed by Mr. Chashi Gyelshen of TMD, Olakha after changing of 3 phase Conductor between death end tower and 66kV gantry at Olakha substation. After receiving code no.2118 from BPSO, Feeder was test charged but could not hold and tripped again. Feeder was kept shutdown for further line patrolling by line staff. After completion of work, charged the feeder with BPSO code no.2127 and hold normal.	
7	5/11/2021	15:52	5/11/2021	16:05	0		66kV Bus Coupler	Olakha Substation	OC&EF and Distance protection	Tripp Relay 86	Olakha-Changidaphu feeder	Temporary	Feeder was tripped while Test charging of 66kV Olakha-Changidaphu feeder which was under shutdown for changing of 3 phase Conductor between death end tower and 66kV gantry at Olakha substation. After resetting all relays, test charge the feeder and hold normal.
(D) 66/33/11kV Lohessa Substation													
1	05.05.2021	12:41hrs	05.05.2021	13:06hrs		-7.140	66kV LSA-Basochu	NA	NA	NA	NA	NA	Grid fail from Basochu Plant (machine tripped)
2	26.05.2021	09:15hrs	26.05.2021	01:21hrs	1	0.000	66kV Basochu-LSA	NA	Grid fail	NA	Basochu	Black out	
3	10.05.2021	11:15hrs	10.05.2021	13:08hrs	1	0.000	66kV LSA-Dochula	NA	Cable problem at	OC/EF relay operated	Dochula end	NA	66kV LSA-Dochula feeder tripped on OC/EF relay operated, opening breaker at our end.
4	10.05.2021	16:09hrs	10.05.2021	17:05hrs	0	0.000	66kV LSA-Dochula	NA	Cable problem at	OC/EF relay operated	Dochula end	NA	66kV LSA-Dochula feeder tripped on Dist & OC/EF relay operated, opening breaker at
5	22.05.2021	11:15hrs	22.05.2021	11:57hrs	0	14.230	66kV LSA-Dochula	NA	NA	86 relay operated	NA	NA	66kV LSA-Dochula feeder tripped at 11:15hrs operating breaker open at our end at that
6	26.05.2021	09:15hrs	26.05.2021	01:21hrs	1	0.000	66kV LSA-Dochula	NA	Grid fail	NA	Basochu	black out	66kV LSA-Dochula feeder tripped at 00:15hrs with out any relay & breaker is operated at
7	27.05.2021	08:36hrs	27.05.2021	23:23hrs	14	20.050	66kV LSA-Dochula	NA	Shutdown	NA	NA	NA	66kV LSA-Dochula-Sentsokha taken shutdown as per approval
(E) 66/33/11 kV Pare Substation													
1	5/3/2021	13:35hrs	5/3/2021	14:07hrs	0	2.2	66kV Chando Line in	Olakha all incoming and outgoing feeders					Grid failure from chitkha
2	5/9/2021	13:35hrs	5/9/2021	16:28hrs	0	2	66kV Chando Line in	Olakha all incoming and outgoing feeders					Tripped from chitkha
(F) 66/33/11kV Jemina Substation													
1	03.05.2021	13:47	03.05.2021	14:30	0	-3.24	66 kV Changidaphu	-	Distance relay operated with auto reclose lock out	Distance relay			CB B operation: 236, CB C operation: 239, Ia broken: 47.50 mA, Ib broken: 224.5 mA, Ic broken: 239.6 mA, CB operation: 682.0 ms, Ia: 44.16 A, Ib: 48.86 A, Ic: 40.63 A, Van: 23 kV, Vbn: 25.38 kV, Vcn: 20.15 kV, Charged the feeder at 14:30 Hrs, upon communicating with BPSO Operator.
2	03.05.2021	14:07	03.05.2021	14:26	0	1.29	66 kV Chando	-	Distance relay operated with auto reclose lock out	Distance relay			Ia: 271.7 A, Ib: 30.13 A, Ic: 44.31 A, Van: 21.82 kV, Vbn: 37.97 kV, Vcn: 37.34 kV. Charged the feeder at 14:30 Hrs, upon communicating with BPSO Operator.
3	09.05.2021	16:20	09.05.2021	19:17	2	1.89	66 kV Chando	Black out	Non directional EF operated & auto reclose lock out	IN-D-2 trip			Ia: 981.3 A, Ib: 226.8 A, Ic: 144.8 A, Vbn: 21.55 kV, Vbc: 64.19 kV, Vca: 58.07 kV, IN measured: 616.2 A, IN derived: 616.9 A, Van: 20.81 kV, Vbn: 35.10 kV, Vcn: 38.49 kV, Freq: 50.08 Hz, upon communicating with BPSO Operator, the Substation was supplied from Chando at 19:17 Hrs till Changidaphu end.
4	09.05.2021	16:20	09.05.2021	19:17	2	-3.42	66 kV Changidaphu	Black out	Non directional EF operated & auto reclose lock out	IN-D-2 trip			Ia: 1.0 kA, Ib: 239.1 A, Ic: 140.6 A, Vbn: 21.57 kV, Vbc: 64.34 kV, Vca: 58.28 kV, IN measured: 628.8 A, IN derived: 629.5 A, Van: 20.88 kV, Vbn: 35.09 kV, Vcn: 38.51 kV, Freq: 50.08 Hz, upon communicating with BPSO Operator, the Substation was supplied from Chando at 19:17 Hrs till Changidaphu end.

(G) 66/33/11kV Dochensholling substation													
Sl. No.	Date	Time	Duration	Severity	Impact	Equipment	Reason	Remarks	Customer Impact				
1	03.05.2021	13:38hrs	03.05.2021	14:57hrs	0	-6.024	66KV UC	Supply failed from source					
2	08.05.2021	01:20hrs	08.05.2021	01:29hrs	0	0.125	66KV Gasa O/D	Over current	Gasa end tripped	Fdr tripped due fault at Gasa end.			
3	09.05.2021	16:53hrs	09.05.2021	17:12hrs	0	-8.228	66KV UC	Supply failed from Semoikha					
4	15.05.2021	18:53hrs	15.05.2021	19:04hrs	0	-5.481	10MVA Tr-I & II	Over current	50B & 50C/36	Not known	Transformer tripped due to jerking of 23KV Thinkpa Hydro fault.		
5	17.05.2021	11:43hrs	17.05.2021	11:50hrs	0	-1.225	-do-	REF prom.	86 relay	-do-	Transformer tripped on REF prom.		
6	01.05.2021	09:42 hrs	01.05.2021	17:19hrs	5 hrs	3.784	10MVA Tr-II	NI	Shutdown taken by Project Office Olakha TPO for fixing the 30MVA Transformer accessories by Hydra machine.				
7	01.05.2021	17:25hrs	01.05.2021	19:08hrs	2 hrs	6.028	10MVA Tr-I	NI	Shutdown issued to TPO olakha to installed conservator Tank at new 30MVA Transformer by Hydra machine				
8	01.05.2021	18:15hrs	01.05.2021	19:30hrs	1 hrs	6.662	10MVA Tr-II	NI	10MVA-II Transformer shut down taken by Olakha TPO for connecting conservator accessories.				
9	01.05.2021	11:10 hrs	01.05.2021	17:40hrs	5 hrs	2.806	10MVA Tr-II	NI	Shutdown issued to TPO olakha for transporting the filter Machine to switchyard by Hydra Machine.				
10	04.05.2021	11:04hrs	04.05.2021	11:32 hrs	0	9.674	10MVA Tr-II	NI	TPO project Sr Engineer took the shut down for unloading another filter machine at transformer yard by the Hydra machine.				
11	04.05.2021	11:35hrs	04.05.2021	12:16hrs	0	2.674	10MVA Tr-I	NI	Shut down taken by Project Office Olakha TPO for fixing the 30MVA Transformer-II radiator (fan) from HV side by Hydra Machine.				
12	04.05.2021	12:10hrs	04.05.2021	18:02hrs	6hrs	7.427	10MVA Tr-II	NI	Shifting of Filter machine to other location by Hydra Machine				
13	08.05.2021	12:15hrs	08.05.2021	19:06hrs	6hrs	3.384	10MVA Tr-I	NI	Shutdown taken by Project Office Olakha TPO for fixing the 30MVA Transformer-II radiator (fan) from HV side by Hydra Machine.				
14	12.05.2021	10:40hrs	12.05.2021	16:19hrs	3hrs	3.077	10MVA Tr-II	NI	Shutdown taken by Project Office Olakha TPO for fixing the 20MVA-II Transformer-II HV bushing current transformer with help of Hydra Machine.				
15	13.05.2021	09:10hrs	13.05.2021	18:14hrs	9hrs	3.175	10MVA Tr-II	NI	Installation of bushing CT at new 30MVA s'ner-II				
16	14.05.2021	09:15hrs	14.05.2021	18:56hrs	9hrs	2.923	10MVA Tr-II	NI	Shutdown by PTO office to fix the pipe line of conservator tank to main transformer body.				
17	15.05.2021	09:30hrs	15.05.2021	10:55hrs	0	3.143	10MVA Tr-II	NI	For shifting the filter machine from transformer II location to near the transformer-I				
18	15.05.2021	11:10hrs	15.05.2021	14:22hrs	3hrs	2.490	10MVA Tr-I & 20MVA Tr-I	NI	Shutdown taken by SMD maintenance team to make alignment of 33KV side Bus coupler Isolator, spare dr line & bus isolator				
19	15.05.2021	14:58hrs	15.05.2021	19:00hrs	3hrs	4.733	10MVA Tr-II	NI	Shutdown taken by Olakha project office to connect the pipe.				
20	17.05.2021	10:30hrs	17.05.2021	15:13hrs	4hrs	0.728	10MVA Tr-II	NI	Shutdown available by project staff for fixing and adjustment of pipe on conservator tank.				
21	18.05.2021	10:45hrs	18.05.2021	18:26hrs	7hrs	2.729	10MVA Tr-II	NI	Shutdown available by SMD semoikha site team to for retrofitting new digital relay of 10MVA-II				
22	19.05.2021	10:02hrs	19.05.2021	14:09hrs	4hrs	2.322	10MVA Tr-I	NI	For shifting of CCTV for 66KV Gasa				
23	19.05.2021	14:10hrs	19.05.2021	19:30hrs	3hrs	5.908	10MVA Tr-II	NI	Replacement of CT at HV & LV side of 10MVA Tr-II by Smd site semoikha.				
24	20.05.2021	10:10hrs	20.05.2021	19:29hrs	9hrs	2.329	10MVA Tr-II	NI	Continuation of replacement of HV CT and testing of relay				
25	21.05.2021	10:10hrs	21.05.2021	18:30hrs	3hrs	2.570	10MVA Tr-II	NI	30MVA transformer-II Tan Delta test and IR test by SMD site team.				
26	22.05.2021	10:40hrs	22.05.2021	18:19hrs	7hrs	2.169	10MVA Tr-II	NI	Shutdown taken by Olakha TPO for testing of LV side CT of 30MVA Transformer & installation of relay				
27	24.05.2021	10:15hrs	24.05.2021	16:13hrs	6hrs	1.85	10MVA Tr-II	NI	For testing 30MVA Tr-II				
28	24.05.2021	18:24hrs	24.05.2021	19:11hrs	3hrs	3.428	10MVA Tr-I	NI	For installation of Radiator at 30MVA Tr-I				
29	24.05.2021	09:55hrs	24.05.2021	20:23hrs	10hrs	2.11	10MVA Tr-II	NI	For testing 30MVA Tr-II & installation of Meter in control room				
30	26.05.2021	14:03hrs	26.05.2021	18:41hrs	2hrs	1.89	10MVA Tr-II	NI	Continuation of testing 30MVA Tr-II.				
31	27.05.2021	10:05hrs	27.05.2021	11:40hrs	1hrs	2.269	10MVA Tr-II	NI	For installation of HV & LV bushing of 30MVA Transformer-II				
32	29.05.2021	12:12hrs	29.05.2021	14:22hrs	2hrs	0	20MVA Tr-II	NI	For releasing the Air from Transformer for loading.				
33	31.05.2021	11:17hrs	31.05.2021	15:45hrs	4hrs	0	30MVA Tr-II	NI	For testing 30MVA relay.				
34	31.05.2021	11:22hrs	31.05.2021	17:40hrs	6hrs	0	30MVA Tr-II	NI	For testing 30MVA Tr LV side CT.				
(H) 66/11kV Haas Substation													
1	06.05.2021	16:21	06.05.2021	16:27	0	-1.66	66KV Incoming, along with all the feeders.	unknown	O.C	Source Gal, Chakha	66KV incoming tripped from the source on overcurrent. The same was normalised further.		
2	20.05.2021	16:13	29.05.2021	16:20	0	-1.34	66KV Incoming, along with all the feeders.	unknown	O.C	Paugbea substation, Paug	66KV incoming tripped from Paugbea substation on overcurrent. The same was normalised further.		
(I) 220kV Substation Semoikha													
1	22.05.2021	11:16hrs	22.05.2021	11:27hrs	1.00	-28.940	220kV Semoikha-Chakha Line	220kV Semoikha-Chakha Line	Transient L2-L3 Fault	Zone-1 Fault Loop= L2-L3, Zone-2 fault loop= 20kV/11kV	44.5km	Transient	No customer affected
2	22.05.2021	11:27hrs	22.05.2021	12:13hrs	0.00	-28.940	220kV Semoikha-Chakha Line	220kV Semoikha-Chakha Line	Transient L2-L3 Fault	Zone-1 Fault Loop= L2-L3, Zone-2 fault loop= 20kV/11kV	45.4km	Transient	No customer affected
3	25.05.2021	00:23hrs	25.05.2021	00:43hrs	0.00	16.490	220kV Semoikha-Chakha Line	220kV Semoikha-Chakha Line	Transient L2-N Fault	Fault Loop= L2-N	51km	Transient	No customer affected
4	09.05.2021	16:23hrs	09.05.2021	16:27hrs	0.00	15.730	Semoikha ss& Olakha ss	50MVA-1	Tripped along with 66KV Olakha line	Earth fault, HV & LV Backup Protection Optd	-	Transient	Whole Thinkpa
5	09.05.2021	16:27hrs	09.05.2021	17:20hrs	0.00	15.730	Semoikha ss& Olakha ss	50MVA-1	Tripped along with 66KV Olakha line	Earth fault, HV & LV Backup Protection Optd	-	Transient	Whole Thinkpa
6	11.05.2021	15:51hrs	11.05.2021	15:55hrs	0.00	12.640	Semoikha ss& Olakha ss	50MVA-1	Tripped along with 66KV Olakha Line from Semoikha ss	Differential protection Optd	-	Transient	No customer affected
7	09.05.2021	16:23hrs	09.05.2021	16:28hrs	0.00	15.750	Semoikha ss& Olakha ss	50MVA-2	Tripped along with 66KV Olakha line	Earth fault, HV & LV Backup Protection Optd	-	Transient	Whole Thinkpa
8	09.05.2021	16:28hrs	09.05.2021	17:15hrs	0.00	15.750	Semoikha ss& Olakha ss	50MVA-2	Tripped along with 66KV Olakha line	Earth fault, HV & LV Backup Protection Optd	-	Transient	Whole Thinkpa
9	09.05.2021	16:23hrs	09.05.2021	17:16hrs	0	16.77	66KV Semoikha- Olakha Line	Semoikha ss& Olakha ss	Directional EF	Directional EF	-	Transient	Whole Thinkpa
10	11.05.2021	15:51hrs	11.05.2021	15:56hrs	0	11.83	66KV Semoikha- Olakha Line	Semoikha ss& Olakha ss	Dir. EF/O.C	Is=130A, Is=4.044KA, Is=11.1.2A	-	Transient	No customer affected
11	25.05.2021	00:21hrs	25.05.2021	00:25hrs	0	1.21	10MVA-1	All 11kV Outgoing Fe	OC/EF	OC/EF	-	Transient	All 11kV Direct customers affected.
12	25.05.2021	00:21hrs	25.05.2021	00:26hrs	0	1.21	10MVA-2	All 11kV Outgoing Fe	OC/EF	OC/EF	-	Transient	All 11kV Direct customers affected.
13	31.05.2021	23:44hrs	01.06.2021	00:43hrs	0	9.560	Semoikha Substation	Semoikha Substation	Shutdown taken by Pem Letho to remove drooping conductor of sectionalizer of 66KV bus				
14	31.05.2021	23:44hrs	01.06.2021	05:26hrs	5.00	9.550	Semoikha Substation	Semoikha Substation	Shutdown taken by Pem Letho to remove drooping conductor of sectionalizer of 66KV bus				
15	31.05.2021	23:44hrs	01.06.2021	00:48hrs	1.00	15.050	Semoikha Substation	Semoikha Substation	Shutdown taken by Pem Letho to remove drooping conductor of sectionalizer of 66KV bus				
16	31.05.2021	23:42hrs	01.06.2021	00:45hrs	1.00	1.420	Semoikha Substation	Semoikha Substation	Shutdown taken by Pem Letho to remove drooping conductor of sectionalizer of 66KV bus				
17	31.05.2021	23:43hrs	01.06.2021	05:26hrs	5.00	1.410	Semoikha Substation	Semoikha Substation	Shutdown taken by Pem Letho to remove drooping conductor of sectionalizer of 66KV bus				

(J)66/33/11kV Pangbesa substation										
1	29.05.2021	16:15hrs	29.05.2021	16:22hrs	0	2.2	66kV OG Haas feeder	Haas	O/C	Transient
(K) 66.33kV Changidaphu Substation										
1	09.05.2021	16:23hrs	12.05.2021	17:38hrs	73	-1.92	66kV Olakha-Changidaphu Line	Changidaphu and Olakha ss	Rpl Conductor sapped and get contact with Tph conductor	Bobesa near IT park
2	14.05.2021	08:10hrs	14.05.2021	18:43hrs	10.00	-5.810	66kV Olakha-Changidaphu Line	Changidaphu and Olakha ss	No indication	Permanent
3	09.05.2021	18:26hrs	12.05.2021	17:58hrs	59.00	-1.920	66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line	Shutdown taken by TMD to rectify Rpl conductor near IT park Bobesa	TMD carried out the maintenance work on the same line
4	13.05.2021	08:25hrs	13.05.2021	17:58hrs	9.00	-1.920	66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line	Annual Maintenance of the line by TMD.	
5	14.05.2021	08:10hrs	14.05.2021	18:43hrs	10.00	5.810	66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line	Annual Maintenance of the line by TMD.	
6	17.05.2021	08:15hrs	17.05.2021	18:25hrs	10.00		66kV Olakha-Changidaphu Line	66kV Olakha-Changidaphu Line	Annual Maintenance of the line by TMD.	Near Jemina
(L) 66.33kV Damji Substation										
1	03.05.2021	13:38hrs	03.05.2021	14:08hrs	0	-2\$	66.33kV Incoming line		Outages	Outages of 66kV line from Dfing due to grid failure from the source.

June 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation /lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault (Line segment/ Substation)	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
66kV & Above													
1	01.06.2021	22:58	02.06.2021	1:42	1	21	50/63MVA Transformer I	Malbase s/s	Overcurrent	General trip, LBB trip, 86 optd, 51 trip.	66kV Pline line	Overcurrent fault	IL1=759.97A<-1.97 deg, IL2=750.2A<-124.4deg, IL3=733.06A<-11.67deg, IL4=22.13A<-127.06deg. Note: Due to permanent fault in pling line, Feeders connected to the same bus of it could not withstand while test charged. After knowing the fault and isolating pling line only we could charged rest of the feeders.
2	01.06.2021	22:58	02.06.2021	1:45	1	21	66kV Pasakha feeder I	Malbase S/S	Overcurrent	50trip,86 optd,General trip.	66kV Pline line	Overcurrent fault	IL1=991.76A<-8.95 deg, IL2=1324A<-134deg, IL3=1164A<-115.41deg, IL4=455.4A<-5.36deg.
3	01.06.2021	22:58	02.06.2021	14:58	15	-	66kV Bus Coupler	Malbase S/S	Earth fault	-	66kV Pline line	O/C & E/F	IL1=7691.81A<-84.3 deg, IL2=340.5A<-115.9deg, IL3=138.67A<-91.54deg, IL4=7437.5A<-84.27deg.
4	05.06.2021	20:37	05.06.2021	20:42	0	81	200MVA ICT	Malbase S/S	Earth fault	67/67N optd and 86 optd.		O/C & E/F	G2 PHASE A [FWD]-LS- IDMTL IA=1062A, PHASE B [FWD] 51.66A, PHASE C [FWD] IC=112.7A, E/F [FWD] IDMTL IE=974.5A.
5	05.06.2021	20:37	05.06.2021	20:45	0	21	50/63MVA Transformer III	Malbase S/S		OLT-C-BUCH trip			IL1=29.1A<-99.23 deg, IL2=69.09A<-176.39deg, IL3=121.24A<-126.15deg, IL4=189.78A<-139.84deg.
6	06.06.2021	23:20	06.06.2021	23:29	0	20	50/63MVA Transformer I	Malbase S/S	Overcurrent	LBB trip, General trip, 86 B optd	66kV Pline line	Overcurrent fault	IL1=768A<-3.29 deg, IL2=694.51A<-133.45deg, IL3=392A<-137.94deg, IL4=614A<-117.75deg.
7	06.06.2021	23:20	06.06.2021	23:31	0	20	66 kV Pasakha Feeder I	Malbase S/S	Overcurrent	General trip, IOC 50trip, 86 trip	66kV Pline line	Overcurrent fault	IL1=549A<-10.19deg, IL2=175.3A<-139.15deg, IL3=209.96A<-138.42deg, IL4=171.57A<-130.2deg.
8	06.06.2021	23:20	06.06.2021	23:26	0	-	220kV Bus Coupler	Malbase S/S	Overcurrent	SPA1 140C relay optd. I- trip.	66kV Pline line	Overcurrent fault	Bus coupler tripped due to jerk from 66kV side.
9	06.06.2021	23:20	06.06.2021	23:30	0	-	66kV Bus Coupler	Malbase S/S	E/F	IOC trip, General trip, IEF 50N trip.	66kV Pline line	Overcurrent fault & E/F	IL1=7695.44A<-23.75deg, IL2=290.58A<-17.36deg, IL3=68.15A<-33.41deg, IL4=7695A<-23.75deg.
10	12.06.2021	9:19	12.06.2021	9:24	0	24	66 kV Pasakha Feeder IV	Malbase S/S	E/F	General trip, IEF 50N trip, 86 optd.	66kV Pasakha IV line	E/F	IL1=2427.31A<-45.63deg, IL2=271.05A<-76.9deg, IL3=166.6A<-90.27deg, IL4=2538.37A<-133.82deg.
11	12.06.2021	9:19	12.06.2021	9:24	0	24	66 kV Pasakha Feeder II	Malbase S/S	Overcurrent	General trip, IEF 50N trip, 86 optd.	66kV Pasakha II line	Overcurrent fault	IL1=0.27A<-40.72deg, IL2=1233.14A<-35.39deg, IL3=768.98A<-56.88deg.
12	12.06.2021	9:19	12.06.2021	9:24	0	25	66 kV Pasakha Feeder IV	Malbase S/S	Overcurrent	General trip, IEF 50N trip, 86 optd., IOC 50-trip.	66kV Pasakha IV line	Overcurrent fault	IL1=1111.43A<-51.27deg, IL2=401.95A<-166.54deg, IL3=579.73A<-120.4deg.
13	19.06.2021	21:18	19.06.2021	21:25	0	23	66 kV Pasakha Feeder I	Malbase S/S	E/F	General trip, IEF 50N trip, 86 optd.	66 kV Pasakha Feeder I line	E/F	IL1=2592.08A<-47.93deg, IL2=299.68A<-94.45deg, IL3=151.74A<-127.77deg, IL4=2651.07A<-127.7deg.
14	19.06.2021	21:18	19.06.2021	21:25	0	23	66 kV Pasakha Feeder II	Malbase S/S	Overcurrent	General trip, IEF 50N trip, 86 optd.	66 kV Pasakha Feeder II line	Overcurrent fault	IL1=0.32A<-140.09deg, IL2=1299.73A<-147.96deg, IL3=848.99A<-131.43deg.
15	19.06.2021	21:18	19.06.2021	21:25	0	24	66 kV Pasakha Feeder IV	Malbase S/S	Overcurrent	General trip, IEF 50N trip, 86 optd.	66kV Pasakha IV line	Overcurrent fault	IL1=911.17A<-31.23deg, IL2=304.4A<-146.04deg, IL3=615.55A<-104.45deg.
16	19.06.2021	21:18	19.06.2021	21:25	0	-	66kV Bus Coupler	Malbase S/S	E/F	General trip.	-	E/F	IL1=1437.31A<-46.94deg, IL2=467.77A<-33.36deg, IL3=330.93A<-66.28deg, IL4=2226.45A<-31.4deg.
17	22.06.2021	20:30	22.06.2021	20:39	0	78	200MVA ICT	Malbase S/S	Overcurrent	67/67N optd and 86 optd.	-	-	PHASE A [FWD]-LS- IDMTL IA=1190A, PHASE B [FWD] IB= 166.1A, PHASE C [FWD]-LS-IC=1418A, E/F [FWD] IDMTL IE=923.4A.
18	22.06.2021	20:30	22.06.2021	20:43	0	27	50/63MVA Transformer III	Malbase S/S	-	Diff. trip	-	-	IL1=21A<-171.66deg, IL2=121.64A<-133.03deg, IL3=59.47A<-175.64deg, IL4=186.2A<-150.48deg.
19	22.06.2021	20:30	22.06.2021	20:53	0	51	220kV Birpara Feeder	Malbase S/S & Birpara line	Overcurrent	Zone 1 trip, 86 OPTD.	18.77 kM	Overcurrent fault	IL1=4.613kA, IB=379.7A, IC =5.197kA
(B) 220/66/11 kV Singhigoan Substation													
1	05.06.2021	20:37	05.06.2021	21:07	0	7	220kV Samtae feeder	GIS, Singhigoan s/s	E/F	O/C trip, 86 trip.	Samtae line	E/F	IL1=5006 A, IL2=64.75A, IL3=83.95A, I4 =4866A
2	12.06.2021	9:19	12.06.2021	9:20	0	5	66kV Bhutan Concast & Druk cement Feeder	GIS, Singhigoan s/s	Overcurrent	General trip, O/C trip, IE>> trip, I>> Directional trip, IEP Directional Trip.	-	Overcurrent Fault	IL1=5.24kA, IL2=0.42kA, IL3=0.22kA
3	19.06.2021	21:18	19.06.2021	21:27	0	1	66kV Bhutan Concast & Druk cement Feeder	GIS, Singhigoan s/s	Overcurrent	I>>D irectional trip, General trip	-	Overcurrent Fault	IL1=5.28kA, IL2=0.42kA, IL3=0.28kA

B)66/33/11 kV Phuntsholing Substation													
1			04.06.2021	9:00	9	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder				At 09:00hrs issued shutdown to Jigme Gyaleg, Sr.Engineer,TMD Pling with work permit no 522 for re-string snapped conductor between location PS-3 & PS-4. After completion of works at 18:30hrs CB closed from Malbase end and 66kV Malbase-Pling feeder kept under idle position.	
2			05.06.2021	11:27	11	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder				At 11:27hrs charged 66kV Pling-Malbase feeder which was under idle condition with charging code 1035 as per instruction from BPSO (for supply reliability at Pling Se), since 66kV Chukha-Pling feeder taken shutdown by Gedu substation for rectification of isolators at Gedu substation. At 13:45hrs opened CB of 66kV Pling-Malbase feeder after getting clearance from BPSO with opening code 0008 and again the feeder was kept under idle condition.	
			08.06.2021	10:00			66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Line		66kV Malbase-Pling feeder test charged with charging code 1070 for checking the healthiness of line as per instruction from BPSO. At 10:39hrs opened CB of said feeder as per instruction from BPSO with opening code 0017.	
##			20.06.2021	17:37	17	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder		Line		66kV Malbase-Pling feeder test charged with charging code 1753 from from BPSO, since there was shutdown on 66kV Chukha-Pling feeder. At 18:44hrs opened CB of said feeder as per instruction from BPSO with opening code 0075.	
##	30.06.2021	2:06	30.06.2021	12:08	10	0.98	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder	DSTN OPTD, 196&86	Gomtu substation		66kV Pling-Gomtu feeder tripped at our end and 66kV Chukha-Pling feeder got tripped at their end causing blackout at Pling. At 02:09hrs supply was extended from Malbase substation after informing to BPSO. At 02:25hrs 66kV Chukha-Pling feeder normalised from chukha end. 66kV Pling-Gomtu fdr taken shutdown by Gomtu substation since jumper conductor got snapped at Gomtu ss end. After completion rectification works at Gomtu at 12:08hrs 66kV Pling-Gomtu feeder normalised with charging code 1283 from Gomtu substation. Opened CB of 66kV Malbase-Pling with opening code 0106 from BPSO and feeder was kept under idle charged.	
D) 66/33/11 kV Gedu Substation													
1	03.06.2021	13:29	03.06.2021	13:32	0	0.17	66/33/11kV 5MVA Tr-III	33kV Gurungdara-II		REF	Substation	Charged the Transformer after isolating the out going feeder. 33kV Gurungdara feeder-II was charged from 33kV Gurungdara feeder-I.	
2	04.06.2021	9:35	20.06.2021	22:00	12	0.13	66/33/11kV 5MVA Tr-III	Nil	Isolator alignment problem and oil filtration		Substation	Shutdown	Work permit No. 71 issued to Mrs. Rinchen Zangmo, Sr. Engineer of SMD Pling to carry out HV isolator alignment problem and to perform oil filtration.
3	05.06.2021	11:36	05.06.2021	13:50	2	0.18	66/33/11kV 5MVA Tr-III	Nil	Isolator alignment problem		Substation	Shutdown	Work permit No. 72 issued to Mrs. Rinchen Zangmo, Sr. Engineer of SMD Pling to carry out HV isolator alignment problem on 5MVA 66/33kV transformer-III.
4	07.06.2021	18:10	07.06.2021	20:33	2	1.16	66kV Chukha -Pling Line	Black out	Rectificatin of isolator alignment.		Substation		For rectification of 5MVA transformer-III HV side isolator alignment.
5	08.06.2021	12:17	08.06.2021	12:33	0	1.58	66kV Chukha -Pling Line	Black out	Rectificatin of isolator alignment.		Substation		For rectification of 5MVA transformer-III HV side isolator alignment.
6	17.06.2021	12:52	23.06.2021	11:30	372	1.6	5MVA 66/11kV Tr-II	Nil	Oil filtration		Substation	Shutdown	Work permit No. 76 issued to Mrs. Rinchen Zangmo Sr. Engineer of SMD Pling for transformer oil filtration.
7	20.06.2021	18:08	20.06.2021	18:40	0	1.48	66kV Chukha -Pling Line	Black out	Rectificatin of isolator alignment.		Substation		For rectification of 5MVA transformer-III HV side isolator alignment.
8	21.06.2021	12:27	26.06.2021	14:35	122	0.34	8MVA 66/33kV Tr-	Nil	Oil filtration		Substation	Shutdown	Work permit No. 77 issued to Mrs. Rinchen Zangmo Sr. Engineer of SMD Pling for transformer oil filtration.
9	23.06.2021	11:17	27.06.2021	16:57	101	0.79	5MVA 66/11kV Tr-I	Nil	Oil filtration		Substation	Shutdown	Work permit No. 78 issued to Mrs. Rinchen Zangmo Sr. Engineer of SMD Pling for transformer oil filtration.
10	26.06.2021	14:30	27.06.2021	11:58	21	0.43	66/33/11kV 5MVA Tr-III	Nil	Oil filtration		Substation	Shutdown	Work permit No 79 issued to. Mrs Rinchen Zangmo, Sr Engineer for oil filtration on OLTC.
11	30.06.2021	2:06	30.06.2021	2:10	0	0.51	66kV Chukha -Pling Line	Black out			line		Supply charged from Phuntsholing end.
E) 66/33/11 kV Gomtu Substation													
1	30.06.2021	2:06	30.06.2021	02:41	0	-0.301	Dhamdum	Whole Gomtu	NA	NA	Gomtu Sub Station		Supply failed from Dhamdum Sub Station.
2	30.06.2021	2:06	30.06.2021	12:08	10	0.24	Gomtu-P/Ling	Nil	Over Current	IDMTL Over Current 51AX,51BX,51CX	Gomtu Sub Station		Y phase conductor between Wave trap and Line isolator burned to dead.
F) 220/66/33 kV Dhamdum Substation 220kV													
1	05.06.2021	20:37	05.06.2021	20:46	0	-6.74	220 kV Singyegoan	N/A	Transient fault	REL670-General trip,Zone-1, R,Ph	N/A	N/A	220kV singyegoan feeder tripped from both the end and charge at 20:46hrs as per the clearance given by BPSO, T/phu. Dist. Showing :19.56km and 48.90% and C/B Closed from Malbase end at 21:07 hrs.
2	30.06.2021	2:06	30.06.2021	2:41	0	0.25	66kV Gomtu feeder	Gomtu	Transient fault	REF615=DR.O/C 67 Trip. R,Y,B Ph fault.	N/A	N/A	66kV Gomtu Feeder feeder tripped at both the ends at 02:06hrs and charged at 02:41 hrs as per the charging code No 1280 by Phub Zangmo, BPSO Thimphu.

July 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
66kV & Above													
1	24.07.2021	18:28	24.07.2021	21:40	3	22	50 MVA Transformer III.	Malbase S/S	Inter Tripped as 400kV snapped and touched on the 66kV Multicircuit feeder going towards Industrial State	86, RET 670	fault on 66kV multicircuit Line.	Overcurrent	I1=469.31A, I2=58.87A, I3=92.28A, I4=389.75A
2	24.07.2021	18:28	24.07.2021	18:42	0	40	200MVA ICT	Malbase S/S		67/67N,86	fault on 66kV multicircuit Line.	Overcurrent fault	I1=1029A, I2=184.573A, I3=400A, I4=576.68A
3	24.07.2021	18:28	30.07.2021	12:46	138	20	66 kV Pasakha fdr I	Malbase S/S		86 operated. 10C-50- trip, IEF-50N-TRIP	fault on 66kV multicircuit Line.	Overcurrent fault	I1=6075A, I2=322.2A, I3=124.71A, I4=137.63.
4	24.07.2021	18:28	30.07.2021	12:46	138	20	66 kV Pasakha fdr II	Malbase S/S		86 operated. 10C-50- trip, IEF-50N-TRIP	fault on 66kV multicircuit Line.	Overcurrent fault	I1=0.16A, I2=454.65A, I3=166.34A,
5	24.07.2021	18:28	30.07.2021	12:45	138	20	66 kV Pasakha fdr IV	Malbase S/S		86 operated. General trip IEP directional trip	fault on 66kV multicircuit Line.	Overcurrent fault	I1=1048.38A, I2=239.34A, I3=511.47A.
(B) 66/33/11 kV Phuntsholing Substation													
1	24.07.2021	15:30	24.07.2021	18:54	3	0.75	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder		DSTN OPTD, 186&86 fault imp- 14.3, fault angle-27, fault current-2.07A, fault location-49.0	Line		66kV Pling-Gomtu feeder tripped at our end. At 18:36hrs test charged after getting clearance from BPSO but got tripped on same fault. Informed to BPSO. At 18:54hrs charged after getting clearance from BPSO after opening CB from Gomtu end and stood normal.
(E) 66/33/11 kV Gomtu Substation													
1	24.07.2021	18:30	24.07.2021	18:55	0	-0.81	66kV Gomtu-P/ling	Whole Gomtu	Grid failed	Distance and over current	Malbase		Distance relay and over current relay oprtd. at P/ling Substation.
2	24.07.2021	18:30	24.07.2021	18:59	0	-3.765	66kV Dhamdum	Whole Gomtu	Grid failed	NA	Malbase		Charged after the given instruction from BPSO.
(F) 220/66/33 kV Dhamdum Substation													
220kV													
1	24.07.2021	18:30	24.07.2021	19:05	0	-7.33	220kV Malbase	220KVMalbase	Line fault	NA	Malbase	N/A	220 kV Malbase -Dhamdum and 220 kV Singeygoan - Dhamdum feeder got tripped from Malbase substation. We were informed that the Conductor has snap and fallen on the Multicircuit at Malbase substation causing tripping of 220 kV (bus coupler and ICT) . After isolating the fault , line was charged at 7.05 am from Malbase substation. Since 220 kV (Malbase and Singeygoan) feeder was tripped from Malbase end, there was power interruption from 66 kV Dhamdum to Gomtu. 66 kV Pling Gomtu ring system could not be charged from Pling SS. At 18:56 Hrs Pling -gomtu and Gomtu -Dandum charged. No tripping of CB was encountered in Dhamdum substation.
2	24.07.2021	18:30	24.07.2021	19:05	0	-0.6	220kV Singeygoan	220KV Singeygoan	Line fault	NA	Singeygoan	N/A	
3	24.07.2021	18:30	24.07.2021	18:56	0	3.95	66 kV Gomtu	66 kV Gomtu	Line fault	NA	Gomtu	N/A	

(C) 66/33kV Olakha Substation													
1	7/7/2021	9:08	7/7/2021	9:10	0	7.8	66/33kV 20MVA Transformer I	All the out going feeders was effected as both the 20 MVA I & II transformer was tripped.	Due to tripping of 33kV Chubachu feeder (Fdr.IV)	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Optd.Trip Relay 86.	Olakha	Transient Fault	The 66/33kV 20MVA Transformer I was tripped due to tripping of 33kV O/G feeder IV (Chubachu).Charged the feeder and hold normal.
2	7/7/2021	9:08	7/7/2021	9:10		7.7	66/33kV 20MVA Transformer II	All the out going feeders was effected as both the 20 MVA I & II transformer was tripped.	Due to tripping of 33kV Chubachu feeder IV, the transformer got tripped	DIR.Over current and Earth fault Protection relay 86 Indication: 1 & 5 1 General Trip & 5 O/C & E/F operated.	Line Segments	Transient Fault	The 66/33kV 20MVA Transformer II was tripped due to tripping of 33kV O/G Chubachu feeder IV.
3	7/9/2021	14:10	7/9/2021	14:11	0	7.0	66/33kV 20MVA Transformer I	The supply was not effected as the feeders was fed from 66/33kV 20MVA Transformer II	Temporary Fault	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Optd.Trip Relay 86.	Olakha	Transient Fault	Reset the relays, charged the Transformer I and hold normal.
4	7/12/2021	8:46	7/12/2021	13:27	4	7.7	66/33kV 20MVA Transformer I	Only 33kV DPH II Feeders VI was effected as the feeders was fed from 66/33kV 20MVA Transformer II	The transformer was tripped due to tripping of 33kV DPH II feeders VI	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.	33KV DPH II Feeders VI line	Transient Fault	The transformer was tripped on differential. Issued the work permit no 1059 to Sr. Engineer SMD and TCCD Sherub Dorji for checking the relay coordination between Transformer and outgoing feeders. Charged the feeder after checking relays and hold normal.
5	7/16/2021	7:02	7/16/2021	13:07	6	6.5	66/33kV 20MVA Transformer I	Only 33kV Chubachu feeders IV was effected as the feeders was fed from 66/33kV 20MVA Transformer II	The transformer was tripped due to tripping of Chubachu feeders IV	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.	33KV Chubachu Feeders IV line	Transient Fault	The transformer was tripped on differential. Issued the work permit no 1060 to Engineer SMD and TCCD Sherub Dorji for checking the relay coordination between Transformer and outgoing feeders. Charged the 20MVA Transformer I after checking relays setting and hold normal.
7	7/19/2021	20:45	7/19/2021	20:48		10.2	66/33kV 20MVA Transformer II	All the out going feeders was effected as both the 20 MVA I & II transformer was tripped.	O/C & E/F	DIR.Over current and Earth fault portn relay 67 indication: 5 O/C &E/F operated.	Line Segments	Transient Fault	The 66/33kV 20MVA,Transformer II was tripped and test charged the feeder and hold normal.
10	7/28/2021	18:54	7/28/2021	19:22	0	7.3	66/33kV 20MVA Transformer I	The supply was not effected as the feeders was fed from 66/33kV 20MVA Transformer II	Transformer Differential Protection relay Operated	TRAF0 DIFFL. PROT.N. RELAY 87.Indication : 1,4 & 5. 1. General Trip 4.Diff Trip Bph.5.Diff Prot.	Olakha	Temporarity	20MVA Transformer I tripped on differential protection, informed to maintenance engineers for test charging of the Transformer. Charged the transformer after confirmation received and hold normal.
11	7/28/2021	19:06	7/28/2021	19:10		20.3	66/33kV 20MVA Transformer II	All the out going feeders was effected as both the 20 MVA I & II transformer was tripped.	O/C & E/F	DIR.Over current and Earth fault portn relay 67 indication: 1,2,5 O/C &E/F operated.	Olakha Substation	Over load.	Due to overload, transformer II was tripped as Transformer I and 33KV Incomer I was in trip position due to differential protection indication.
(I) 220kV Substation Semtokha													
1	21.07.2021	15:50hrs	21.07.2021	15:55hrs		31.030	50MVA-II	Semtokha SS	Over Current	RET316 relay opid.	-	Transient	
2	21.07.2021	16:35hrs	21.07.2021	16:46hrs		0.130	66kV Semtokha-Dechula Line	SCADA data validation at both Semtokha and BPSO end.				Transient	No customer affected

August 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
66kV & Above													
1	17.08.2021	1:16	17.08.2021	1:34	0	418	400kV Tala - Malbase feeder	Malbase S/S	tripped due to OC on Y phase at Tala end.	A-B start, A/R L fault	line fault	Overcurrent fault	No fault displayed, 06 did not operate but both Main and Tie breaker open/tripped.
2	17.08.2021	3:40	17.08.2021	3:56	0	-133	220kV Chukha feeder	Malbase S/S	tripped due to OC on B phase.	Dist trip, Zone 1 AR location shot.	Distance=10.23km	Overcurrent fault	IL1=268.6A, IL2=551.5A, IL3=5.417KA
3	17.8.2021	3:40	17.08.2021	4:20	0	24	50 MVA Transformer no III.	Malbase S/S	Tripped due to chukha feeder.	86 operated, Diff. Trip.	Switch Yard	tripped	IL1=91.45A<-48.45deg, IL2=151.5A<-109.62deg, IL3=74.87A<-115.61deg, IL4=279.28A<-94.61deg.
4	25.08.2021	1:21	25.08.2021	14:00	12	73	200 MVA ICT	Malbase S/S	Buchholz trip	86,B phase BUCHH trip	transformer yard	tripped	IL1=0.121A<-50.21deg, IL2=0.032A<-155.6 deg, IL3=0.07A<-48.2deg.
5	25.08.2021	9:30	25.08.2021	13:15	3	73	200 MVA ICT(R Y B) phase	Malbase S/S	Shutdown	-	-	Shutdown	PTW no. 51 was issued to Mr. Parsu Ram Mishra, SMG plng, for rectification of Buchholz trip.
(B)220/66/11 kV Singhigoan Substation													
1	19.08.2021	14:44	20.08.2021	20:00	29	0.074	11kV Feeder I	GIS, Singhigoan s/s	Overcurrent on R, Y phase	Ip trip, O/C trip, 1>> Trip/General trip.	Pole washed away by flood at Gurungdara.(2 span conductor damaged)	tripped	IL1=8.73kA, IL2=8.32kA, IL3=0.01kA
(B)66/33/11 kV Phuntsholing Substation													
1	06.08.2021	14:35	06.08.2021	15:02	0	0.16	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder		DSTN OPTD, 186&86	Line	Tripped on Fault	66kV Pling-Gomtu feeder tripped at our end and 66kV Chukha-Ping from their end causing black out. At 14:59hrs 66kV Chukha-Ping feeder normalised from chukha end and at 15:02hrs test charged after getting clearance from BPSO and stood normal.
2			06.08.2022	14:40	14	idle	66kV Malbase-Ping feeder	66kV Malbase-Ping feeder					At 14:40hrs charged 66kV Malbase-Ping feeder after getting approval from BPSO with charging code 1414 which was under idle charged condition. At 15:02hrs opened CB of 66kV Malbase-Ping feeder with opening code 0193 from BPSO after normalising 66kV Chukha-Ping and 66kV Pling-Gomtu feeder.
3			06.08.2022	21:35	21	idle	66kV Malbase-Ping feeder	66kV Malbase-Ping feeder					At 21:35hrs charged 66kV Malbase-Ping feeder with charging code 1418 from BPSO which was under idle charged condition, since at Gomtu end B phase conductor got snapped. At 15:02hrs opened CB of 66kV Malbase-Ping feeder with opening code 0193 from BPSO after normalising 66kV Chukha-Ping and 66kV Pling-Gomtu feeder.
4	07.08.2021	11:03			#NUM!	0.75	66kV Malbase-Ping feeder	66kV Malbase-Ping feeder					At 11:03hrs opened CB of 66kV Malbase-Ping feeder with opening code 0197 from BPSO and feeder kept under idle condition.
(D) 66/33/11 kV Gedu Substation													
1	06.08.2021	14:37	06.08.2021	14:40	0	1.29	66kV Chukha-Phuntsholing line.	Black out	Bad weather		Line segment		Charged from Chukha end.
(E) 66/33/11 kV Gomtu Substation													
1	06.08.2021	14:38	06.08.2021	14:59	0	0.42	66kV Dhamdum/P/ling	Gomtu	Grid Fail	Nil	Line Segment		Both Supply failed from Dhamdum and Phuntsholing.
2	06.08.2021	21:24	07.08.2021	10:56	13	0.42	66kV P/Ling	Nil	B Phase conductor snapped	Nil	Gomtu Substation		Hand tripped the breaker against shutdown Code No. 0194 and charged against charging Code No. 1420
(F) 220/66/33 kV Dhamdum Substation													
1	06.08.2021	14:38	06.08.2021	14:54	0	6.71	66kV Gomtu	Gomtu	Transient fault	REF615=DIR 0/C67) TRIP-R,Y,B Ø fault	Gomtu line	N/A	Relay indication : { 67 -Direction over current/Earth fault relay} IL1 = 1.7 kA, IL2 =1.5 kA, IL3 1.7 kA . (3 phase fault) . Since weather condition was bad, BPSO has informed us to charge the line .

SMD Semtokha													
Tripping Report for the month of AUGUST 2021													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
66kV LSA - Dochula feeder													
1	07.08.2021	15:47hrs	07.08.2021	15:55hrs	0	17.460	6kV LSA-Dochul	NA	line fault	OC& EF with 86 relay	NA	NA	66kV LSA -Dochula feeder tripped at 15:47hrs operating breaker at our end & Dochula end and informed to BPSO at 15:55hrs with the charging code 1422 breaker towards closed towards Dochula and line stand thereafter.
2	11.08.2021	01:27hrs	11.08.2021	01:35hrs	0	19.170	6kV LSA-Dochul	NA	line fault	OC& EF with 86 relay	NA	NA	66kV LSA -Dochula feeder tripped at 01:27hrs operating breaker at our end & Dochula end and informed to BPSO at 01:35hrs the breaker towards closed towards Dochula and Basocm and line stand thereafter.
3	11.08.2021	01:43hrs	11.08.2021	03:57hrs	2	22.150	6kV LSA-Dochul	NA	line fault	NA	NA	NA	66kV LSA -Dochula feeder tripped at 01:43hrs without any relay or breakers operated at our end and at 03:57AM supply resumed from Basocm.
4	16.08.2021	03:40hrs	16.08.2021	04:10hrs	0	19.240	6kV LSA-Dochul	NA	line fault	OC& EF relay with 86 relay	NA	NA	66kV LSA -Dochula feeder tripped at 03:40hrs due to under voltage at Dochula and closed the breaker with the closing code from BPSO at 04:10hrs and line stand thereafter.
66kV LSA - Gewathang Basochu feeder													
1	11.08.2021	01:27hrs	11.08.2021	01:35hrs	0	19.170	6kV LSA-Basoch	NA	line fault	OC& EF with 86 relay	NA	NA	66kV LSA -Basochu feeder tripped at 01:27hrs operating breaker at our end & Basochu end and informed to BPSO at 01:35hrs the breaker towards closed towards Basochu and line stand thereafter.
2	11.08.2021	01:43hrs	11.08.2021	03:57hrs	2	22.150	6kV LSA-Basoch	NA	line fault	NA	NA	NA	66kV LSA -Basochu feeder tripped at 01:43hrs without any relay or breakers operated at our end and at 03:57AM supply resumed from Basochu.
(H) 66/11kV Haa Substation													
1	08.08.2021	4:03	08.08.2021	6:22	2hrs	-0.5	All the feeders	due to Damthang feeder	E/F & O/C		Yangto, Haa		Incomer tripped along with all the outgoing feeders due to the fault on the Damthang feeder. Incomer supply test charged from Pangbesa end with the closing code 1427 from BPSO but failed to stand, so, after isolating the faulty feeder (Damthang), 66kV incomer was once again test charged vide closing code 1429 and it was found normal. The faulty feeder was kept isolated as to carry out line patrolling by ESD, Haa.
(I) 220kV Substation Semtokha													
1	11.08.2021	01:28hrs	11.08.2021	01:46hrs		-45.770	220kV Semtokha-Ruricka Line	220kV Semtokha-Ruricka Line	Over Voltage	Main-1 Dist. Optd. Over Voltage trip		Temporary	
2	10.08.2021	10:16hrs	10.08.2021	10:19hrs		36.870	220/66kV 50.63MVA-2	Semtokha and Dochula Substation	Over Current (Tripped while opening Dochula to lobesa line)	Over Current and Inst. Over current Optd.		Temporary	
3	11.08.2021	03:50hrs	11.08.2021	03:51hrs		37.820	220/66kV 50.63MVA-2	Semtokha and Dochula Substation	Over Current (Tripped while opening Dochula to lobesa line)	Over Current and Inst. Over current Optd.		Temporary	
4	11.08.2021	01:29hrs	11.08.2021	01:37hrs		33.670	66kV Semtokha-Dochula Line	Semtokha and Dochula Substation	Broken Conductor	Dist. Relay Optd. Broken conductor trip		Temporary	
5	10.08.2021	10:17hrs	10.08.2021	11:54hrs	1.00	1.730	66/11kV 10MVA_2	Semtokha Substation	Hard trip to extend station supply from 10MVA-1				
6	31.08.2021	08:59hrs	31.08.2021	12:50hrs	4.00	42.060	66kV Semtokha-Dochula line	66kV Dochula Substation	Shutdown taken by Mr. Kinley Wangchuk, Project Manager to make jumper connection on tower location 31 and jumper opening at tower 32			Transient	No customer affected
(J) 66/33/11kV Pangbesa substation													
1	07.08.2021	15:12	07.08.2021	15:14	0	0.99	66kV OG-Haa		Tripped on O/C	Distance Relay		Transient	
2	08.08.2021	4:02	08.08.2021	6:23	2	0.53	66kV OG-Haa		Tripped on O/C & E/F	Distance Relay		Long	Despite Test charging in coordination with BPSO, the line could not stand. Lastly it was found out that Haa end one of 11kV fit had a problem where 66 Line was charged after isolating 11kV feeder.

September 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 kV Malbase Substation													
66kV & Above													
1	02.09.2021	4:38	02.09.2021	4:45	0	5.75	220kV Malbase-Damdum feeder	Malbase S/S and Damdum	OC trip on Y phase-Earth fault	main 1 trip, zone 1 trip, 86 optd	30.8 km	Overcurrent fault	IL1=102.6A<350.1deg, IL2=29.66A<163.4deg, IL3=75.836A<348.7deg, IL4=279.4A<163deg
2	06.09.2021	2:09	06.09.2021	15:20	13	22	50/63MVA transformer I	Malbase Substation	Trip due to fault in 66kV p/ling feeder	LBB optd	66kV pling line		IL1=972.71 A<-2.24deg, IL2=949.23A<-121.92deg, IL3=947.4A<-117.92deg
3	06.09.2021	15:09	06.09.2021	15:25	0	22	66kV Pasakha feeder I	Malbase Substation	Trip due to fault in 66kV p/ling feeder	86optd, IOC 50trips	66kV pling line		IL1=1132.19A<-85.03deg, IL2=1787.25A<152.75deg, IL3=890.56A<37.4deg
4	06.09.2021	15:09	06.09.2021	15:20	0	-	66kV bus coupler	Malbase Substation	Trip due to fault in 66kV p/ling feeder	86 optd, IEF50N trip	66kV pling line		IL1=12132.49A<-39.7deg, IL2=11926.93A<-161.8deg, IL3=12012.05A<77.94deg, IL4=538.29A<28.6deg
5	12.09.2021	0:28	12.09.2021	14:30	14	-	66kV pling feeder		O/C & E/F	86 optd, IN1-trip	66kV pling line		IL1=1.689A, IL2=8.632kA, IL3=3.255A, IN=8.627kA
6	12.09.2021	0:28	12.09.2021	14:04	13	-	66kV bus coupler	Malbase Substation	O/C & E/F	IOC 50trip, IEF50N trip, general trip	66kV pling line		IL1=646.11A<-130.91deg, IL2=12296.21A<-145.5deg, IL3=376.16A<71.12deg, IN=12628.97A<-145.8deg
7	12.09.2021	14:30	12.09.2021	14:33	0	17	66kV Pasakha feeder I	Malbase Substation	O/C & E/F	IEF 50N trip, 86 optd	66kV pasakha line		IL1=555.61A<179.64deg, IL2=1310.29A<25.33deg, IL3=277.12A<86.45deg, IL4=1058.95A<-127.45deg
8	12.09.2021	14:30	12.09.2021	14:32	0	-	66kV bus coupler	Malbase Substation	O/C & E/F	IEF 50N trip, 86 optd	66kV pasakha line		IL1=2461.34A<-21.13deg, IL2=12416.11A<-146.14deg, IL3=381.59A<67.03deg, IN=10844.10A<-136.65deg
9	12.09.2021	14:30	12.09.2021	14:34	0	19	66kV Pasakha feeder IV	Malbase Substation	O/C	IEF 50N trip, 86 optd	66kV pasakha line		IL1=567.86A<42.45deg, IL2=1634.29A<-15.41deg, IL3=109.93A<60.84deg
10	13.09.2021	13:02	13.09.2021	13:28	0	44	220kV Birpara feeder	Malbase Substation	O/C on B Phase	86 optd, AR lockout shot, zone1 trip	fault location =24.46km		IL1=414.5A, IL2=313.9A, IL3=3345A
11	13.09.2021	13:02	13.09.2021	13:30	0	23	50/63MVA transformer III	Malbase Substation	tripped due to Birpara feeder	Differential trip	24.46km		IL1=89.02A<32.26deg, IL2=122.49A<-108.89deg, IL3=77.94A<121.91deg, IN=37.71A<-126.02deg
12	16.09.2021	13:36	16.09.2021	13:44	0	24	50/63MVA transformer III	Malbase Substation					IL1=136.19A<6.63deg, IL2=47.19A<-5.87deg, IL3=68.59A<68.29deg, IN=217.28A<19.97deg
13	17.09.2021	18:54	17.09.2021	20:03	1	-3	400V Silguri feeder	Malbase Substation	O/C & E/F	Main 1 trip, zone1 trip	44.8 km		IL1=248.6A<46.87deg, IL2=265.2A<28.07deg, IL3=1157A<36.8deg, IL4=3321A<36.49deg
(B) 220/66/11 kV Singyeogon Substation													
1	02.09.2021	4:38	02.09.2021	4:58	29	0.4	Singyeo- sambso feeder	Singyeogon	Overcurrent	86 optd	220kV sambso line	O/C tripped	IL1=96.04A, IL2=2556A, IL3=86.7A, IL4=2376A
2	16.09.2021	13:35	16.06.2021	16:14		1.16	Singyeo- sambso feeder	Singyeogon	Overcurrent	86 optd	220kV sambso line	O/C tripped	IL1=102.2A, IL2=35.35A, IL3=64.32A
(B) 66/33/11 kV Phuntsholing Substation													
1	21.09.2021	14:47	21.09.2021	17:15	2		66kV Chukha and Gomtu feeder	66kV Chukha and Gomtu feeder	Tripped		Chukha and Gomtu end		Both 66kV feeder got tripped at their end causing blackout at Phuntsholing. Informed to BPSO and supply was extended from 66kV Malbase.
2			21.09.2021	14:50	14		idle	66kV Malbase- Pling feeder	66kV Malbase- Pling feeder				At 14:50hrs charged 66kV Malbase-Pling feeder since both 66kV Chukha and Gomtu feeder got tripped at their end. At 17:18hrs opened CB of 66kV Malbase-Pling feeder with opening code 0320 from BPSO and feeder kept under idle condition.
(D) 66/33/11 kV Gedu Substation													
1	21.09.2021	14:47	21.09.2021	14:50	0	1.08	66kV Chukha- Phuntsholing line.		Blackout		Line segment		Supply resumed from Chukha, CHP.
(E) 66/33/11 kV Gomtu Substation													
1	21.09.2021	14:54	21.09.2021	14:56	0	-7.367	66kV Dhamdum	Nil	General tripped		Dhamdum	General	Test charged from Dhamdum and supply stood normal
2	21.09.2021	15:40	21.09.2021	15:47	0	-7.395	66kV Dhamdum	Gomtu substation	General tripped		Dhamdum	General	Test charged from Dhamdum and supply stood normal
3	21.09.2021	15:40	21.09.2021	15:45	0	5.32	66kV P/Ling	Gomtu substation	General tripped		P/Ling	General	Test charged from Dhamdum and supply stood normal
Tripping Report for the month of SEPTEMBER 2021													
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 66kV Chumdu switching station													
1	28.09.2021	13:05hrs	28.09.2021	13:16hrs		4.44MW	66kV Jemina Feeder	Fed from 66kV Chukha feeder	Transient fault	G-trip, 3ph trip, CB open.	chumdu	Trip	
2	29.09.2021	14:00hrs	29.09.2021	14:10hrs		(-) 10.65MW	66kV Chukha Feeder	Para, Paanghas, Jemina	Grid failure	No operation at chumdu end.	Generation end	Grid failure	
(B) 66/33kV Watsa Substation													
1	20/9/2021	14:37hrs	20/9/2021	14:42hrs		250MW	66kV SF6	Fdr. I and Fdr. II	O/C, OCH & E/F	O/C, OCH & E/F	Fdr. II Chapcha		Tree fallen on 33kV line at Zimba
2	29/9/2021	13:38hrs	29/9/2021	13:43hrs		290MW	66kV Incomer	Fdr. I and Fdr. II	66KV supply fail from source	66KV supply fail from source	66KV supply fail from source	Tripped	
3	29/9/2021	13:59hrs	29/9/2021	14:12hrs		290MW	66kV Incomer	Fdr. I and Fdr. II	66KV supply fail	66KV supply fail	66KV supply fail from source	Tripped	

(C) 66/33kV Olakha Substation													
1	9/1/2021	2:10	9/1/2021	3:15	1	2.83	20MVA Transformer II	All the 33kV Outgoing feeders got effected as the 33kV Incomer I & II was tripped.	Over current and Earth fault,	Directional Over current and Earth fault protection relay and tripping relay 86.	Olakha substation	DC Supply failed	20MVA Transformer II could not charged due to failure of DC. Charged the Transformer after the DC supply was rectified.
2	9/1/2021	2:10	9/1/2021	3:23	1	2.9	20MVA Transformer I	All the Outgoing feeders got effected as the 33kV Incomer I & II was tripped.	Over current and Earth fault, the Transformer could not charged due to failure of DC.	Directional Over current and Earth fault protection relay-67 and tripping relay 86.	Olakha substation	DC fuse blown out	Charged the Transformer after the DC supply was rectified. The fuse blown at charger end was replaced with new one.
3	9/8/2021	11:27	9/8/2021	11:37	0	-16.63	66kV Sentsokha-Olakha line	All the 33kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end.
4	9/8/2021	11:27	9/8/2021	11:37	0	4.32	66kV Olakha - Changidaphu line	All the 33kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end. The 66kV incomer was charged after information received from BPSO
5	9/12/2021	12:10	9/12/2021	12:17	0	3.46	66kV Olakha - Changidaphu line	All the 33kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end. The 66kV incomer was charged after information received from BPSO
6	9/12/2021	12:10	9/12/2021	12:17	0	-18.9	66kV Sentsokha-Olakha line	All the 33kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end.
7	9/29/2021	13:04	9/29/2021	13:14	0	-9.65	66kV Sentsokha-Olakha line	All the 33kV Outgoing feeders was effected due to failure of Basochhu line	Supply failed from the Basochhu	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end.
8	9/29/2021	13:58	9/29/2021	14:23	0	0	66kV Olakha - Changidaphu line	All the 33kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Sentsokha Substation, the 66kV Supply was tripped from Riruchha end. The 66kV incomer was charged after information received from BPSO
9	9/29/2021	13:58	9/29/2021	14:23		5.58	20MVA Transformer I	All the Outgoing feeders got effected as the 33kV Incomer I & II was tripped.	Grid fail	Nil	Line Segments	Line Segments	Charged the 20MVA Transformer I and stood normal
10	9/29/2021	13:58	9/29/2021	14:23		5.58	20MVA Transformer II	Olakha substation	Grid fail	Nil	Line Segments	Grid fail	Charged the 20MVA Transformer and hold normal.
(D) 66/33/11kV Lobeysa Substation													
66kV LSA - Dochula feeder													
1	29.09.2021	13:59hrs	29.09.2021	14:24hrs	0	20.950	66kV LSA-Dochula	Lobeysa Substation	Grid fail	NA	NA	NA	66kV LSA -Dochula feeder grid fail at 13:59hrs without any relay or breakers operated at our end and supply
66kV LSA - Basochhu feeder													
1	29.09.2021	13:59hrs	29.09.2021	14:24hrs	0	-24.520	66kV LSA-Basochhu	Lobeysa Substation	Grid fail	NA	NA	NA	66kV LSA -Dochula feeder grid fail at 13:59hrs without any relay or breakers operated at our end and supply
(E) 66/33/11 kV Paro Substation													
1	15.09.2021	20:27	29.09.2021	20:32	0	7.43	66kV Chando - Line In	Black out at paro		Tripped from chando end			
2	29.09.2021	13:38	29.09.2021	13:42	0	4.95	66kV Chando - Line In	Black out at paro		Tripped from chakhu			
2	29.09.2021	14:00	29.09.2021	14:13	0	4.95	66kV Chando - Line In	Black out at paro again		Tripped from chakhu			
(F) 66/33/11kV Jemina Substation													
1	12.09.2021	12:08	12.09.2021	12:19	0	0.60 Chando & - 2.13 Chargedaphu	66 kV lines, Chanda & Chargedaphu	Blackout	Earth Fault	Earth fault & Auto reclose lockout	line segment		In: 15.67 A, Ib: 22.02 A, Ic: 85.05 A, In measured: 63.19 A, Vab: 64.53 V, Vbc: 60.24 V & V for Chando & Ib: 11.17 A, Ic: 74.4 & In measured: 63.34 A, Vab: 64.45 V, Vbc: 64.68 V & Vbc: 60.54 V for Chargedaphu.
2	28.09.2021	13:05	28.09.2021	13:16	0	2.91 C/daphu & 4.53 Chanda	66 kV lines, Chanda & Chargedaphu	Blackout	Supply failed from Chando	Nil	Chando Switching station end, shown general trip.		-
3	28.09.2021	13:37	29.09.2021	13:41	0	3.15 C/daphu & 4.62 Chanda	66 kV lines, Chanda & Chargedaphu	Blackout	Distance protection operated at Chargedaphu end	Nil	Chargedaphu end, Distance relay operated.		-
4	29.09.2021	13:59	29.09.2021	14:17	0	3.15 C/daphu & 4.62 Chanda	66 kV lines, Chanda & Chargedaphu	Blackout	Supply failed from Rurichu, at that time Sem - Chu under Shutdown.	Nil	Source		-

(G) 66/33/11kV Dochencholing substation											
1	08.09.2021	11:26Hrs	08.08.2021	11:37hrs	0		66KV I/C Semtokha	Whole fdr.	Supply failed from source.		
2	12.09.2021	12:06Hrs	12.09.2021	12:23hrs	0		66KV I/C Semtokha	Whole fdr.	Supply failed from source.		
3	13.09.2021	14:19Hrs	13.09.2021	14:27hrs	0		66KV I/C Semtokha	Whole fdr.	Supply failed from source.		
4	28.09.2021	13:06Hrs	28.09.2021	13:17hrs	0		66KV I/C Semtokha	Whole fdr.	Supply failed from source. Tripped from Basacha end.		
5	29.09.2021	13:59hrs	29.09.2021	14:18hrs	0		66KV I/C Semtokha	Whole fdr.	Supply failed from source. Tripped from Basacha end.		
66KV side Shut down											
1	01.09.2021	13:00Hrs	01.09.2021	16:09Hrs	3hrs	...	30MVA T-I	supply feed from 30MVA T-II	HV side CT Hissing sound inspection.		
2	02.09.2021	08:32hrs	02.09.2021	08:55Hrs	0	...	33KV O/G-III	Only O/G-III	Shut down taken by ESD Official for phase sequence correction.		
3	11.09.2021	21:23Hrs	11.09.2021	23:58hrs	2hrs	30MVA T-I	supply feed from 30MVA T-II	Operator observed hot spot on HV side of 30MVA T-I. SF6 breaker -R phase terminal, so to protect to our equipment we requested Tabu end to reduce the load, so they permitted us to hand tripped the 33KV O/G-I. (Tabu-II) Some night our mnt team had rectified the hotspot portion and charged 30MVA T-I and charged Tabu O-G-I end informed them to increase the load as normal. Same night maintenance Engineer had shorted Bus		
4	15.09.2021	11:53Hrs	15.09.2021	13:02hrs	1hrs	30MVA T-I	supply feed from 30MVA T-II	Shut down issued to SMD team to arrest the Hot spot at LV side 30MVA T-I VCB breaker terminal in Y phase.		
(H) 66/11kV Haas Substation											
1	29.09.2021	14:00	29.09.2021	14:14	0hrs	-1.14	All the feeders	Due to tripping of 220KV Tsering - Jigmeing line	Supply failed due to tripping of Jigmeing - Tsering line. The same was normalised after extending the supply from 220KV Tsering to BHP power plant.		
(I) 220kV Substation Semtokha											
1	08.09.2021	11:27hrs	08.09.2021	11:37hrs		-17.740		Supply failed from both 220KV source. No tripping at our end	Temporary		
2	28.09.2021	13:04hrs	28.09.2021	13:14hrs		-77.180		Grid Failed. No tripping at our end	Temporary		
3	29.09.2021	13:59hrs	29.09.2021	-77.18		-77.180		Grid Failed. No tripping at our end	Temporary		
4	02.09.2021	12:09hrs	02.09.2021	12:22hrs		59.900	66kV Semtokha-Dochula Line	Docchula Substation	Broken Conductor	Dist. Relay Optd., Single conductor	Transient
5	02.09.2021	04:05hrs	02.09.2021	04:14hrs	0.00	59.530	66kV Semtokha-Dochula Line	Docchula Substation	Fault Loop= L1-L2	Dist. Relay Optd., General Trip	Transient
6	09.09.2021	20:47hrs	09.09.2021	23:24hrs	2.00	64.570	66kV Semtokha-Dochula Line	Docchula Substation	High Line Isolator jammer activated.	Dist. Relay Optd., Inis. Zone 1 trip.	Permanent
7	11.09.2021	19:28hrs	11.09.2021	19:36hrs	0.00	61.890	66kV Semtokha-Dochula Line	Docchula Substation	Fault Loop= L1-L3	General trip, Rph trip	4.6
8	13.09.2021	13:10hrs	13.09.2021	13:20hrs	0.00	42.300	66kV Semtokha-Dochula Line	Docchula Substation		Dist. Relay Optd., General Trip	Transient
9	16.09.2021	16:13hrs	16.09.2021	16:13hrs	0.00	63.840	66kV Semtokha-Dochula Line	Docchula Substation	Fault Loop= L1-L2	Dist. Relay Optd., General Trip	1.8
10	17.09.2021	16:14hrs	17.09.2021	16:34hrs	0.00		66kV Semtokha-Dochula Line	Docchula Substation	Fault Loop= L1-L2	Dist. Relay Optd., General Trip	0
11	21.09.2021	15:09hrs	21.09.2021	15:15hrs	0.00	64.050	66kV Semtokha-Dochula Line	Docchula Substation	Fault Loop= L1-L2	Dist. Relay Optd., General Trip	0
12	13.09.2021	14:19hrs	13.09.2021	14:27hrs	0.00	15.150	66kV Semtokha-Dochencholing Substation	Dechencholing Substation	Under Voltage trip	Dist. Relay optd.	Transient
13	28.09.2021	13:04hrs	28.09.2021	13:04hrs	0.00	19.840	66kV Semtokha-Dochencholing Substation	Dechencholing Substation	Under Voltage trip	Grid failed	Transient
14	22.09.2021	11:09hrs	22.09.2021	12:53hrs	1.00	10.090	40/50MVA Transformer		To attain the oil leakage on yph Bushing		
(J) 66/33/11kV Pangbesa substation											
1	29.09.2021	13:38	29.09.2021	13:42	0	1.6	66kV Chomdo Line In	Black out at paro	Tripped from chukha		
2	29.09.2021	14:00	29.09.2021	14:13	0	1.6	66kV Chomdo Line In	Black out at paro again	Tripped from chukha		
(K) 66/33kV Changidapha Substation											
1	29.09.2021	13:37hrs	29.09.2021	13:41hrs			66kV Changidapha-Jemina Line	66kV Changidapha-Jemina Line	Grid Failed	Dist. Relay optd., RYBph Trip, Power Swing	Transient
2	08.09.2021	11:25hrs	08.09.2021	11:42hrs			66kV Changidapha-Otakha Line	Changidapha Substation	Grid Failed	Dist. Relay optd., Bph Trip, Power Swing	Transient

(L) 66/33kV Damji Substation												
1	08.09.2021	1125 hrs	08.09.2021	1136 hrs	0	-0.27	56 kV Incoming line	66 kV Thimphu-Gasa Line, Damji Substation & all outgoing Feeders	Trip	NA	NA	Line trip from Semtokha Substation
2	12.09.2021	1209 hrs	12.09.2021	1225 hrs	0	-1.07	56 kV Incoming line	67 kV Thimphu-Gasa Line, Damji Substation & all outgoing Feeders	Trip	NA	NA	Line Trip from Semtokha Substation, i.e. 220 kV CHP-SEM Feeder Trip on B Phase Fault (Earth Fault)
3	13.09.2021	1419 hrs	13.09.2021	1428 hrs	0	-0.71	56 kV Incoming line	68 kV Thimphu-Gasa Line, Damji Substation & all outgoing Feeders	Trip	NA	NA	Line Trip from Semtokha Substation, i.e. 220 kV CHP-SEM Feeder Trip
4	28.09.2021	1305 hrs	28.09.2021	1316 hrs	0	-0.85	56 kV Incoming line	68 kV Thimphu-Gasa Line, Damji Substation & all outgoing Feeders	Trip	NA	NA	Line Trip from Semtokha Substation, i.e. 220 kV Ruricha Feeder Trip at Basochu end.
5	29.09.2021	1400 hrs	29.09.2021	1418 hrs	0	-0.83	56 kV Incoming line	68 kV Thimphu-Gasa Line, Damji Substation & all outgoing Feeders	Trip	NA	NA	Western Grid Blackout due to 220 kV Tshirang-Tigmeling Line
6	30.09.2021	1727 hrs	30.09.2021	1732 hrs	0	0.22 & 0.16	lower Transformer	Incomer II & all outgoing feeders	Trip	50 N & S6 OPTD		Tripped due to earth fault & overcurrent of Outgoing Feeder

October 2021

Tripping Report for the month of OCTOBER 2021														
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	Duration of Outages (Min)	MW before outage (MW)	Feeder Name	Name of the Substation/Lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault (Line segment/Substation)	Type of outages	Remarks
(A) 66kV Chundu switching														
Nil														
(B) 66/33kV Watsa Substation														
1	5/10/2021	12:30hrs	5/10/2021	11:00hrs		9min	300MW	66kV M6 breaker	Ph. I and Ph. II	O.C, OCB & P.P	O.C, OCB & P.P relay operated	Ph. II Chupha		True failure on 33kV Bus at Chupha
2	8/10/2021	11:25hrs	8/10/2021	12:30hrs		9min	380MW	66kV Incomer	Ph. I and Ph. II	66kV supply fail from source	66kV supply fail from source	66kV supply fail from source	Tripped	
(C) 66/33kV Olakha Substation														
1	10/3/2021	4:01	10/3/2021	4:33	0	32	0	20MVA Transformer II	All the Outgoing feeders got effected as both the transformer was tripped.	Due to Failure of DC, The transformer got tripped.	Nil	Olakha Substation	DC Failure	After rectification of the DC circuits, Reset the relay and test charged the transformer and hold normal.
2	10/3/2021	3:54	10/3/2021	4:33	0	39	2.8	20MVA Transformer I	All the Outgoing feeders got effected as both the transformer was tripped.	Due to Failure of DC, The transformer got tripped.	Nil	Olakha Substation	DC Failure	After rectification of the DC circuits, Reset the relay and test charged the transformer and hold normal.
3	10/8/2021	12:37	10/8/2021	12:40	0	3	4.18	20MVA Transformer II	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	DIR, Over current and Earth fault portn relay 67 opd. I General trip 2 UV operated, Indication; Bus under Voltage and Over current and earth fault operated.	Line Segment	Transient Fault	Reset the relay and test charged Transformer hold normal.
4	10/8/2021	13:03	10/8/2021	13:17	0	14	0	20MVA Transformer II	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Spring discharged due to tripping of 33kV Incomer I and II	Nil	Substation	Breaker Spring discharged	Due to repeated tripping of the 33kV incomer I & II, the HV breaker of 20MVA I & II had got spring discharged, due to that charging of transformer could not operated manually from local and remote from control room. So after spring was charged from switch yard, Charged the Transformer and stand normal.
5	10/8/2021	14:24	10/8/2021	14:25	0	1	3.53	20MVA Transformer II	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	DIR, Over current and Earth fault portn relay 67 opd. I General trip 2 UV operated, Indication; Bus under Voltage and Over current and earth fault operated.	Line Segment	Transient Fault	Transformer was tripped while charging of 33kV incomer II. After isolating all the feeders, Charged the Transformer and stand normal.
7	10/8/2021	12:22	10/8/2021	12:36		14	1.66	66kV Olakha-Jamisa line	All the 33kV Outgoing line was effected.	To Change the Tap Position on offload Condition at Chikha end	Nil	At Chikha end	Shutdown	The supply was hand tripped from Chikha end to change the Tap position on Off load condition as to boost the voltage on line as per information received from BPSO.
8	10/8/2021	12:32	10/8/2021	12:36	0	4	4.21	20MVA Transformer I	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	Under Voltage Operated along with S6 Tripping relay	Line Segment	Under Voltages	The Transformer was Tripped, while charging of 33kV incomer II.
9	10/8/2021	13:03	10/8/2021	13:17	0	14	0	20MVA Transformer I	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Spring discharged due to tripping of 33kV Incomer I and II	Only S6 Tripping Relay Operated	Substation	Breaker Spring discharged	Due to repeated tripping of the 33kV incomer I & II, the HV breaker of 20MVA I & II had got spring discharged, due to that charging of transformer could not operated manually from local and remote from control room. So after spring was charged from switch yard, Charged the Transformer and stand normal.

Annual Transmission System Performance Report | 2021

10	10/8/2021	13:16	10/8/2021	13:45	0	29	1	33kV DPH I Feeders V	All the 33kV outgoing feeders effected	Due to Change over the supply from Chitkha line	Over Current and Earth Fault along with Master relay Trip. Indication 14- 5	Substation	Voltage problems	Due to Voltage Issues, the feeders was tripped. Reset the relays and test charge the feeders and stood normal.
11	10/8/2021	14:24	10/8/2021	14:25	0	1	3.38	20MVA Transformer I	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incoener II	Only 86 Tripping Relay Operated	Line Segments	Transient Fault	The Transformer was Tripped while charging of 33kV Incoener II, Reset the relay and test charged Transformer hold normal.
12	#####	7:16	#####	7:31	15	4.36	20MVA Transformer I	All the Outgoing feeders not effected as both the transformer was tripped.	Due to Under Voltage	Indication: Bus under voltage opted. O/C and E/F along with tripping relay 86.	Line Segments	Transient Fault	Reset the relay and test charged Transformer hold normal.	
13	#####	10:23	#####	11:11	29	3.08	20MVA Transformer I	All the Outgoing feeders got effected as both the transformer was tripped.	Due to Under Voltage	Indication: Bus under voltage opted. O/C and E/F along with tripping relay 86.	Line Segments	Transient Fault	Reset the relay and test charged Transformer hold normal.	
14	#####	11:21	#####	11:43	22	0	20MVA Transformer I	The feeders was not effected as the supply was fed from Transformer II	Hand Tripped	Nil	Line Segments	Hand Tripped	The Transformer was tripped after instruction from BPSO for testing of voltage, charged the transformer with charging code 1687 from BPSO and hold normal	
15	#####	12:08	#####	12:09	1	3.49	20MVA Transformer II	The feeders was not effected as the supply was fed from 20MVA Transformer I	Tap Changing of Transformer	Nil	Substation	Due to under voltage	20MVA II hand tripped after getting clearance from BPSO to increase the tape position from 9 to 13 with opening code no 0378.Charged the transformer with closing code no.1688 and stand normal.	
16	#####	10:46	#####	10:56	10	0.02	20MVA Transformer II	The feeders was not effected as the supply was fed from 20MVA Transformer I	Tap Changing of Transformer	Nil	Substation	Due to under voltage	20MVA II hand tripped after getting order from BPSO to decrease the tape position from 13 to 9 with opening code no 0389 and charged the transformer with closing code no.1702 and stand normal.	
(D) 66/33/11kV Lohayra Substation														
1	02.10.2021	06:09hrs	02.10.2021	06:31hrs	0	22	24.020	66kV LSA-Dochula	NA	Under voltage at Dochula end	IDMT OC&EF relay	NA	NA	66kV LSA -Dochula tripped at 06:09 hrs, operating breaker open at our end and informed BPSO and line was charged at 06:31hrs with the charging code:1674
2	08.10.2021	20:52hrs	08.10.2021	20:58hrs	0	6	25.090	66kV LSA-Dochula	NA	NA	Dist relay operated with 86 relay	NA	NA	66kV LSA -Dochula tripped at 20:52 hrs, operating breaker open at our end and informed BPSO and line was charged at 20:58hrs with the charging code:1676 and DR submitted to BPSO & C&PD
3	08.10.2021	21:02hrs	08.10.2021	21:11hrs	0	9	22.990	66kV LSA-Dochula	NA	NA	Dist relay operated with 86 relay	NA	NA	66kV LSA -Dochula tripped at 21:02 hrs, operating breaker open at our end and informed BPSO and line was charged at 21:11hrs with the charging code:1677 and DR submitted to BPSO & C&PD
4	08.10.2021	21:13hrs	08.10.2021	21:19hrs	0	12	22.990	66kV LSA-Dochula	NA	NA	Dist relay operated with 86 relay	NA	NA	66kV LSA -Dochula tripped at 21:13 hrs, operating breaker open at our end and informed BPSO and line was charged at 21:19hrs with the charging code:1679 and DR submitted to BPSO & C&PD
6	03.10.2021	03:54hrs	03.10.2021	03:58hrs	0	4	-23.290	66kV LSA-Basochu	NA	NA	86relay operated	NA	NA	66kV LSA -Basochu feeder tripped at 03:54hrs, operating breaker our end and was breaker closed at 03:58hrs. Supply was feeded fro Dochula at time of tripping LSA-Basochu feeder.
(E) 66/33/11 kV Paro Substation														
1	08.10-2021	12:24hrs	08.10-2021	12:32hrs	0	8	5.47	66kV Chundo Line In	Its outgoings	Tripped from chitkha	-			
(F) 66/33/11kV Jemina Substation														
1	08.10.2021	12:23	08.10.2021	12:27	0	4	09.72 Chundo & -11.70 Chanda	66 kV lines, Chundo & Chandeaphu	Blackout	Supply failed from Chitkha.	-	line segment		Supply failed from the Source.
1	02.10.2021	06:08hrs	02.10.2021	06:16hrs	8.00	-72.120	220kV Sentsokha-Ruvichu Line and Sentsokha	220kV Sentsokha-Ruvichu Line and Sentsokha		Main-1 Optd, RYB Trip			Transient	
2	03.10.2021	03:55hrs	03.10.2021	03:58hrs	3.00	-65.100	220kV Sentsokha-Ruvichu Line and Sentsokha	220kV Sentsokha-Ruvichu Line and Sentsokha		Main-1 Optd, RYB Trip			Transient	
3	06.10.2021	21:10hrs	06.10.2021	21:32hrs	16.00	39.310	40/50MVA Deochula Substation	40/50MVA Deochula Substation	W11 gauge of 40/50MVA not out from the structure.	LV Backup optd, Rph Trip, 1-trip	40/50MVA transformer at Sentsokha SS		Temporary	
4	19.10.2021	22:43hrs	19.10.2021	22:48hrs	5.00	63.720	66kV Sentsokha-Dochula Line	66kV Sentsokha-Dochula Line	Fault Loop- L1-L2	Dist. Relay Optd., General Trip	0.600km		Transient	
5	28.10.2021	10:02hrs	28.10.2021	12:55hrs	1.00	52.00	220kV Sentsokha-Ruvichu Line and Sentsokha	220kV Sentsokha-Ruvichu Line and Sentsokha	Shutdown taken by Karma Wangchuk (Incharge of Sentsokha) from Sentsokha.					
6	08.10.2021	09:15hrs	08.10.2021	19:20hrs	418.00	9.00	17.710	66kV Bes-I, 20MVA-1 and 10MVA-1	Shutdown taken by Karma Wangchuk (Incharge of Sentsokha) from Sentsokha.					
7	18.10.2021	16:06hrs	18.10.2021	16:06hrs	3.00	39.00	31.320	66kV Dochula Substation	Disconnection of 3rd and 4th phase of 66kV Dochula line.	Temporary jumper connection at tower no 31.				
8	16.10.2021	00:33hrs	16.10.2021	03:05hrs	1.00	32.00	17.690	66kV Sentsokha-Dochula Line	Disconnection of 3rd and 4th phase of 66kV Dochula line.	Shutdown taken by SANG SENGWAZA for isolation of house near Akha on line column.				
9	24.10.2021	00:10hrs	24.10.2021	01:37hrs	1.00	27.00	12.660	66kV Sentsokha-Dochula Line	Disconnection of 3rd and 4th phase of 66kV Dochula line.	Shutdown taken by Karma Wangchuk, SANG SENGWAZA from Sentsokha as a result of house on Line isolation.				

November 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation /lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 KV Malbare Substation 66kV & Above													
1	15.11.2021	16:10	15.11.2021	16:16	0	33	200 MVA ICT	-	Tripped	PRD OPERATED, PRD tripped, B6 optd	200 MVA ICT	Tripped	ICT got tripped due to on going maintenance work on spare phase ICT, while removing the connection of PRD of Sphase Phase ICT.
2	16.11.2021	9:49	16.11.2021	10:31	0	44	200 MVA ICT	-	Tripped	OIL Surge relay optd. B6 optd, OSR optd.	200 MVA ICT	Tripped	ICT got tripped due to on going maintenance work on spare phase ICT, while removing the connection of PRD of Sphase Phase ICT.
(B) 66.33KV Wassa Substation													
1	14/11/2021	8:02hrs	14/11/2021	8:14hrs		6500KW	66KV SF6 breaker	Fdr. I and Fdr. II	O/C, OCH, EF & EFH	O/C, OCH, EF & EFH relay operated	66KV SF6 breaker charged after resetting relays and supply found normal but the 38KV Breaker got mechanical problem so it could not lock to keep the motor MCB off after consulting with Maintenance team.	Tripped	
(C) 66.33KV Olakha Substation													
1	11/25/2021	18:16	11/25/2021	18:50	0	14.06	66/33KV 20MVA Transformer II	All Fe Outgoing and Incoming feeders got effected as the Transformer I & II was tripped.	Due to Over Current and earth Fault	Over current and earth fault along with B6 trip relay	Olakha Substation	Transient	Reset the relays and charged the transformer individually and found normal
2	11/25/2021	18:16	11/25/2021	18:50	0	14.06	66/33KV 20MVA Transformer II	All Fe Outgoing and Incoming feeders got effected as the Transformer I & II was tripped.	Due to Over Current and earth Fault	Over current and earth fault along with B6 trip relay	Olakha Substation	Transient	Reset the relays and charged the transformer individually and found normal
3	11/26/2021	20:58	11/25/2021	21:22	0	39.78	66KV Olakha-Semakha Line	Olakha substation	Grid failed	Nil	Line Segments	Disc Panature	As per the information received from the Semakha end the supply was full from source as the 220KV Semakha to Paracha, the insulation disc was panature at line.
(D) 66.33/11KV Loberya Substation													
1	25.11.2021	11:43hrs	28.11.2021	12:01hrs	0	17.170	66KV LSA-Dochula	NA	NA	B6 relay operated	NA	NA	66KV LSA -Dochula tripped at 11:43 hrs, operating breaker open at our
2	26.11.2021	20:58hrs	26.11.2021	21:09hrs	0	25.200	66KV LSA-Dochula	NA	NA	B7 relay operated	NA	NA	66KV LSA -Dochula tripped at 20:58 hrs, operating breaker open
3	26.11.2021	23:02hrs	27.11.2021	11:26hrs	12	46.300	66KV LSA-Dochula	NA	NA	NA	NA	NA	66KV LSA -Dochula Hand code 0427 tripped at 23:02 hrs as per
4	26.11.2021	20:39hrs	26.11.2021	22:19hrs	1	25.209	66KV LSA-Basochu	NA	NA	86 relay operated	NA	NA	66KV LSA -Basochu feeder tripped at 20:39hrs, operating breaker open
(E) 66.33/11KV Dechenkolong substation													
1	26.11.2021	20:40hrs	26.11.2021	20:45hrs	0		66KV semakha Incomer	whole fdr.	Supply failed from source				
2	26.11.2021	20:57hrs	26.11.2021	21:26hrs	0		66KV semakha Incomer	whole fdr.	Supply failed from source				
(F) 220KV Substation Semakha													
1	26.11.2021	20:58hrs	26.11.2021	21:22hrs		-80.689	220KV Semakha-Chakha Line	Semakha Substation		Chakha end breaker opened during the test charge of 220KV Semakha-Semakha Line		Transient	
2	26.11.2021	20:42hrs	27.11.2021	18:44hrs	22.00	-66.049	220KV Semakha-Raricha Line and Semakha Substation		11-E (Insulator Dis-Cap at location tower RS-91)	Zone-1, RYB Trip, Fault Loop-L-E	5.1km	Permanent	
(G) 66.33KV Changlaphu Substation													
1	26.11.2021	20:42hrs	26.11.2021	22:06hrs	1	-4.73	66KV Changlaphu-Olakha line	66KV Changlaphu-Olakha line	Grid Failed	Distance relay optd, Reb trip		Transient	
(H) 66.33KV Damji Substation													
1	04.11.2021	0220 hrs	04.11.2021	0225 hrs	0	0.17	Transformer 2	Damji Substation & all outgoing Feeders	Trip	IDMT	NA		Tripped due to earth fault on Panakha Feeder HQ2 (B Phase Trip)
2	04.11.2021	1516 hrs	04.11.2021	1520 hrs	0	0.3	Transformer 2	Damji Substation & all outgoing Feeders	Trip	50 N	NA		Tripped due to earth fault on Panakha Feeder HQ2 (B Phase Trip)
4	05.11.2021	2212 hrs	06.11.2021	0006 hrs	1	0	Transformer 1	NA	Trip	NA	NA		Transformer 1 which was kept under silo charge was trip due BUCH Trip
7	06.11.2021	1241 hrs	06.11.2021	1245 hrs	0	0.37	Transformer 2	Damji Substation & all outgoing Feeders	Trip	50 N & B Phase Trip	NA		Tripped due to earth fault on Gama Feeder
8	06.11.2021	1649 hrs	06.11.2021	1700 hrs	0	0	Transformer 1	NA	Trip	86 OPTD	NA		Idle charge Trafo-1 Ref 615 BUCH Trip
9	06.11.2021	2052 hrs	06.11.2021	2105 hrs	0	0	Transformer 1	NA	Trip	86 OPTD	NA		Idle charge Trafo-1 Ref 615 BUCH Trip, Trafo-1 was charged on LV side with full load on 07.11.2021 at 0950 hrs
10	07.11.2021	1440 hrs	07.11.2021	1446 hrs	0	0.36	Transformer 1	Damji Substation & all outgoing Feeders	Trip	86 OPTD	NA		Tripped due to over current on Panakha Feeder
11	07.11.2021	1748 hrs	07.11.2021	1742 hrs	0	0	Transformer 1	Damji Substation & all outgoing Feeders	Trip	86 OPTD	NA		BUCH Trip
12	07.11.2021	2057 hrs	07.11.2021	2100 hrs	0	0	Transformer 1	Damji Substation & all outgoing Feeders	Trip	86 OPTD	NA		BUCH Trip
13	07.11.2021	0948 hrs	08.11.2021	1108 hrs	26	0.38	Transformer 2	NA	Idle	NA	NA		Transformer 2 (3 MVA) idle charge, full load given to 10 MVA, charged next day for Trafo-1 maintenance
15	10.11.2021	1050 hrs	12.11.2021	0300 hrs	40	0.35	Transformer 1	NA	Trip	86 OPTD	NA		Idle charge Trafo-1 Ref 615 BUCH Trip, after re-energization (idle charge on 12.11.2021 at 0300 hrs and charged on LV side with full at 0945 hrs
17	26.11.2021	2040 hrs	26.11.2021	2045 hrs	0	-0.44	66 KV Incoming Line	Damji Substation & all outgoing Feeders	Trip	NA	NA		Trip due to 66 KV Incoming Line due to 220KV Grid Failure
18	26.11.2021	2058 hrs	26.11.2021	2127 hrs	0	-0.38	66 KV Incoming Line	Damji Substation & all outgoing Feeders	Trip	NA	NA		Trip due to 66 KV Incoming Line due to 220KV Grid Failure
(M) 66/11KV Dochula Substation													
1	26.11.2021	20:58hrs	21:33hrs				substation black out	All DHI farm house	trip from source substation	86 relay			DHI farm house

December 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of outages (Hrs)	MW before outage	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
(A) 400/220/66/11 KV Malbasse Substation													
66KV & Above													
1	01.12.2021	12:23	03.12.2021	13:31	49		200 MVA ICT	-	Tripped	-	200 MVA ICT	Tripped	33kV Tertiary delta connection LA R and Y phase got Blast and charged with code BPSO 1875
2	01.12.2021	12:24	02.12.2021	18:01	5		400KV TAL-MAL FDR.III	-	Tripped	-	400KV TAL-MAL FDR.III	Tripped	R ₁ phase LA got blast and charged with code BPSO 1872.
3	08.12.2021	13:09	08.12.2021	13:19	0	-198	400KV TAL-MAL FDR.III	-	Tripped	O/C, Zone I tripped, optd	Zone I 18.32km	Tripped	The feeder got tripped /line to over current. II= 122.5A I2= 4.675kA I3= 4.107kA
(B) 66/33/11 KV Phuntsholing Substation													
1	25.12.2021	14:57	25.12.2021	15:06	0	1.54	66KV Chukha feeder	66KV Chukha-Phing	DIST OPTD	DIST OPTD, 186 & 86	Line	Tripped on Fault	At 15:06hrs test charged after getting clearance from BPSO and stood normal.
Sl No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks	
(A) 66KV Chanda switching station													
1	01.12.2021	02:17hrs	01.12.2021	02:27hrs		66KV Chukha Incomer	Feed from 66KV Jemina Incomer	insistent fault	CI open	Chanda	Tripp		
(B) 66/33KV Waru Substation													
1	29/12/2021	20:28hrs	29/12/2021	20:33hrs		66KV SF6 breaker	Fdr. I and Fdr. II	O/C, OCH, EF & EFH	O/C, OCH, EF & EFH relay operated	Feeder I Warakha	Tripped	Test charged but line could not hold and kept feeder I Warakha isolator open and the line hold.	
(C) 66/33KV Olakha Substation													
1	12/1/2021	2:07	12/1/2021	2:04	0	66KV Sentsokha- Olakha line	All the outgoing feeders and 33KV Incomer at Olakha was effected	Dist.Protec.Delay Operd.	DISTANCE PROT N RELAY-21 Optd.Indication 1,2,3 & 12, 1-General trip, 2-Distance Optd. 3, Zone 1 Optd. 12,1,1BO Optd.Trip relay-86	Sentsokha Substation	Combustor Susp	As per the information received from the Sentsokha end, the supply was full due to tripping of 66KV Dochula Line. As confirmed by the Shift personal at Sentsokha end, R-Phase conductor snap at Sentsokha Substation.	
2	12/10/2021	12:54	12/10/2021	12:58		66/33KV 20MVA, Transformer I	All the Outgoing feeders got effected as the 33KV Incomer I & II was tripped.	Over Current and Earth Fault protection operated	DRR,Over Current and Earth Fault along with Master Trip Relay - 86	Olakha Substation	Transient Fault	As per telephonic talk received from ESD Ugyen Labcha of Langtangphu Substation, Due to tripping of 33KV outgoing (Langtangphu Fdr.) at 33KV Langtangphu Substation end, the 66/33KV 20 MVA-1 was tripped at our end.	
3	12/10/2021	12:54	12/10/2021	12:59		66/33KV 20MVA, Transformer II	All the Outgoing and Incomer feeders got effected as the Transformer I & II was tripped.	Over Current and Earth Fault protection operated	DRR,Over Current and Earth Fault along with Master Trip Relay - 86	Olakha Substation	Transient Fault	As per telephonic talk received from ESD Ugyen Labcha of Langtangphu Substation, Due to tripping of 33KV outgoing (Langtangphu Fdr.) at 33KV Langtangphu Substation end, the 66/33KV 20 MVA-1 was tripped at our end.	
(D) 66/33/11KV Laboya Substation													
66KV LSA - Dochula feeder													
1	01.12.2021	02:10hrs	01.12.2021	02:27hrs	0	66KV LSA-Dochula	NA	NA	O/C & E/F relay	NA	NA	66KV LSA -Dochula tripped at 02:10 hrs and (re)fed to BPSO, line charged as per BPSO charging code 1861.	
(E) 66/33/11KV Jemina Substation													
1	01.12.2021	2:17	01.12.2021	2:26	0	66 KV Line, Chanda & Changtaphu	Black out	E/F	Earth Fault relay operated	Line segment		Both the lines tripped on Earth Fault on 02:17 Hrs, test charged at 02:26 Hours & stood normal. Transient fault.	
(H) 66/11KV Haa Substation													
1	01.12.2021	2:08	01.12.2021	2:25	0	66KV Incomer	All the feeders	Source fail	NI	Chukha power house		Source fail from Chukha power house, reconnected the supply from the source. Supply was resumed from Pangbasa end after resetting all the relays.	
2	16.12.2021	16:05	16.12.2021	16:49	0	66KV Incomer	All the feeders	unknown	O/C	Pangbasa ss,Pho		Due to heavy snow fall at the end place, the reconnection of supply was delayed. The supply was normalised after stopping the snow fall.	
3	30.12.2021	3:28	30.12.2021	5:07	1	66KV Incomer	All the feeders	unknown	O/C	Pangbasa ss,Pho		Supply was resumed from Pangbasa end after resetting all the relays.	
4	30.12.2021	5:58	30.12.2021	6:05	0	66KV Incomer	All the feeders	unknown	O/C	Pangbasa ss,Pho			
(I) 220KV Substation Sentsokha													
1	01.12.2021	02:02hrs	01.12.2021	12:06hrs	10.00	66KV Sentsokha-Dochula Line	Dochula Substation	IC range 1000000V HTLS disapper	Distance relay optd, Zone 1 trip	Sentsokha substation	Permanent		
2	21.12.2021	18:58hrs	21.12.2021	19:31hrs		40/50MVA Transformer	No Interruption	Transformer tap Position to increase the 66KV side Voltage.					
(J) 66/33/11KV Pangbasa substation													
1	16.12.2021	16:25hrs	16.12.2021	16:40hrs	0	66KV chanda line in	Its outgoings	OC	Distance		Transient		
2	30.12.2021	3:30hrs	30.12.2021	5:08hrs	2	66KV Haa Line Out	Its outgoings and substation lines	OC	Distance	66KV Line out	Long	Tripped Haa 08: due to which it also tripped chanda feeder too	
3	30.12.2021	5:58hrs	30.12.2021	6:03hrs	0	66KV Haa Line Out	Its outgoings	OC	Distance	66KV Line out	Transient		
(K) 66/33KV Changtaphu Substation													
1	01.12.2021	02:03hrs	01.12.2021	02:29hrs		66KV Changtaphu- Olakha line	66KV Changtaphu-Olakha line	Due to Dochula line conductor snapped at Sentsokha substation	Distance relay optd, Rph Zone 1 trip			Transient	
(M) 66/11KV Dochula Substation													
1	26.11.2021	20:58hrs	21:33hrs			substation black out	All DPH farm house	trip from source substation	86 relay			DPH farm house	

