BHUTAN POWER CORPORATION LIMITED

BHUTAN POWER SYSTEM OPERATOR

THIMPHU: BHUTAN

ANNUAL TRANSMISSION SYSTEM PERFORMANCE REPORT FOR THE YEAR 2021

JANUARY-2022

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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

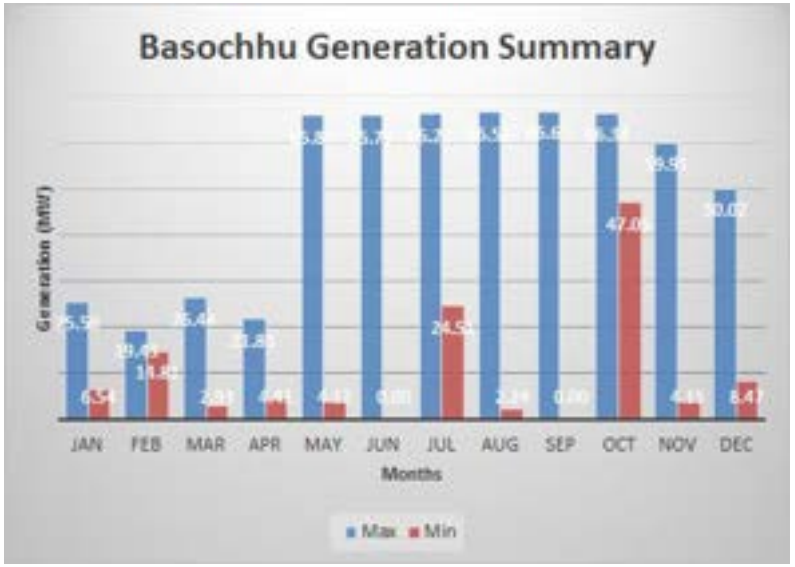
2.1 POWER GENERATION

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.

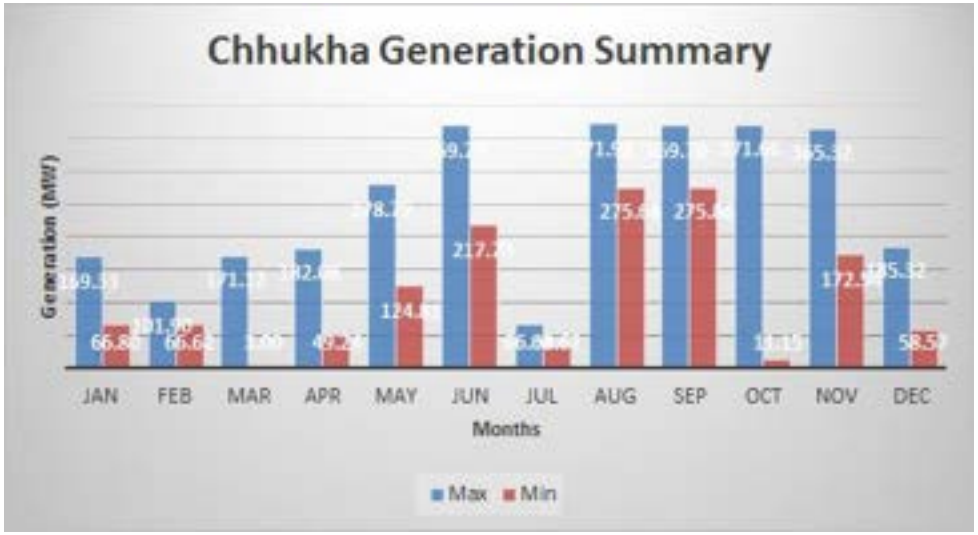
Table: 2.1.1 Monthly maximum and minimum generation summary

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	89.50	9.64	49.73	19.70	180.03	190.64	79.29	239.72	236.31	226.31	101.38	30.19		**9.64**

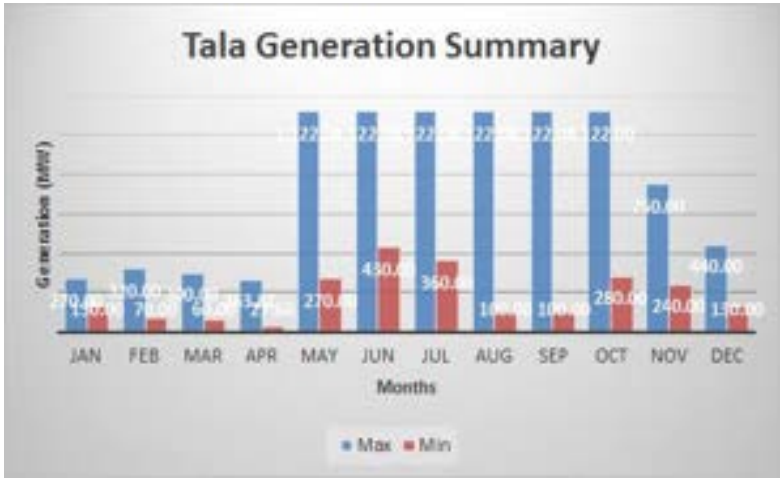
Graph: 2.1.1 Basochhu generation summary



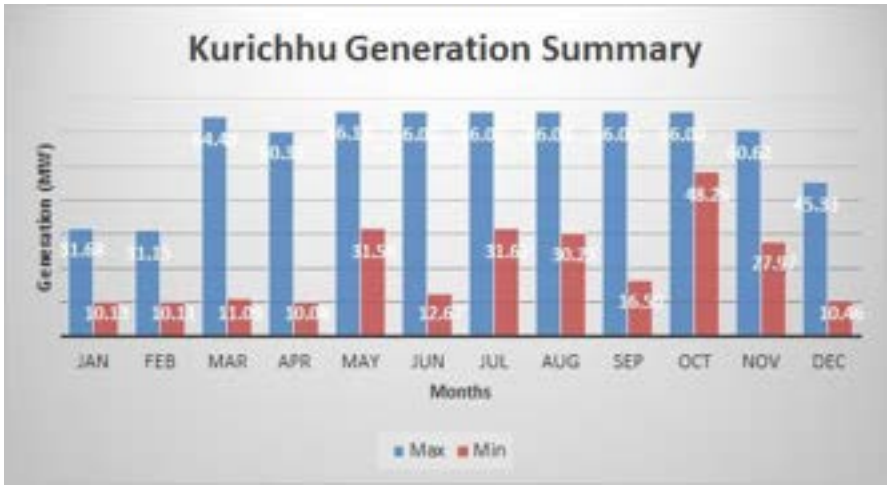
Graph: 2.1 Chhukha generation summary



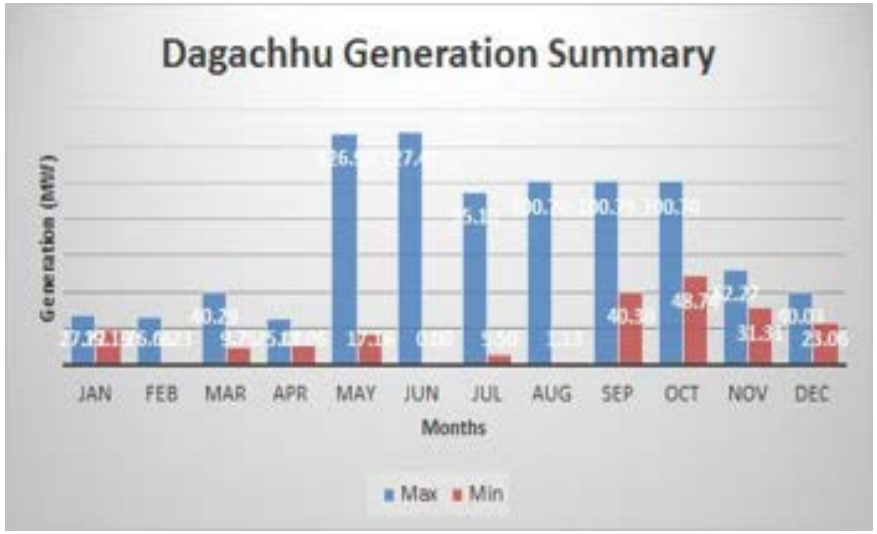
Graph: 2.1.3 Tala generation summary



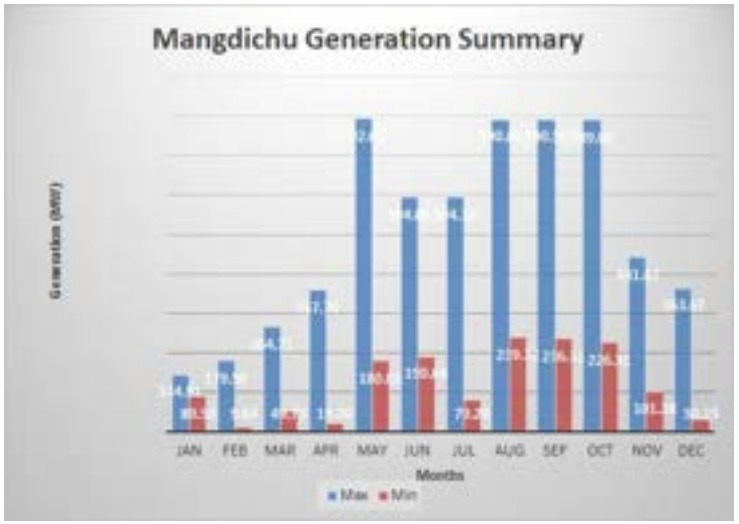
Graph: 2.1.4 Kurichhu generation summary



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:

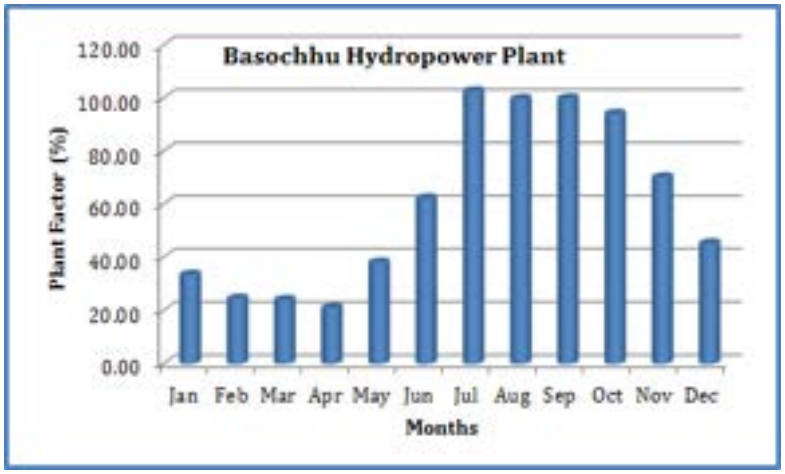
Plant factor = (Actual output of a plant over a period of time) / (Output when operated at name plate rated capacity for entire time)

= (Total energy plant has produced over a period) / (Total energy plant would produce when operated at full rated capacity)

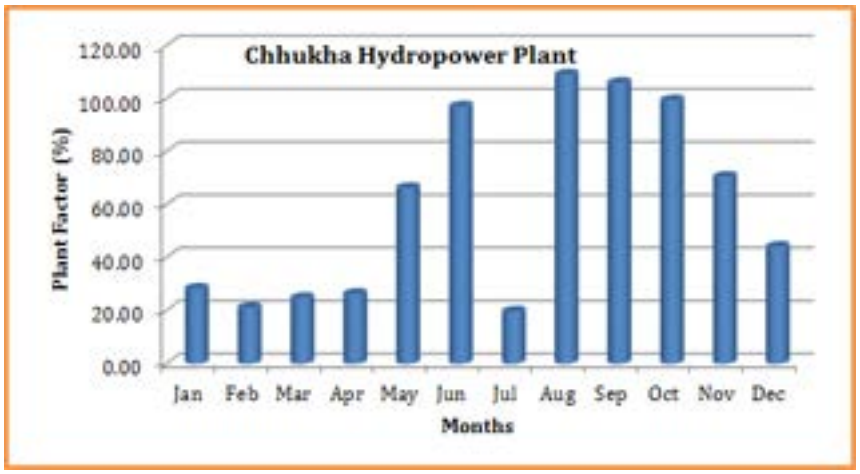
Table: 2.2.1 Monthly plant factor of the hydropower plants

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

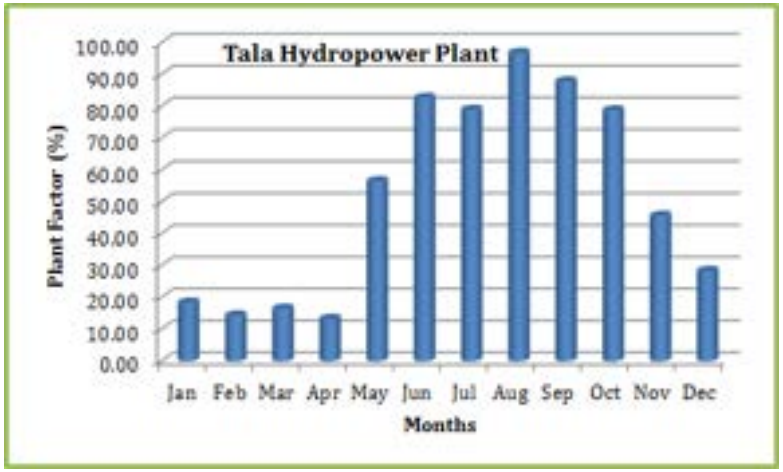
Graph: 2.2.1 Plant factor of Basochhu Hydropower Plant



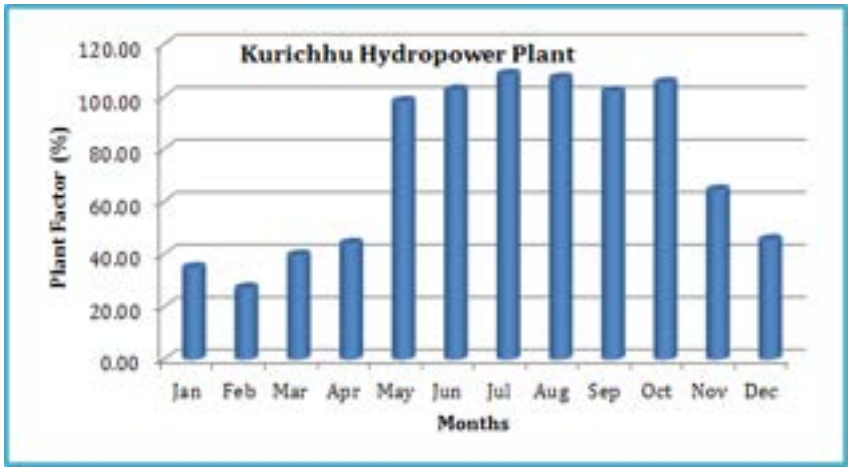
Graph: 2.2.2 Plant factor of Chhukha Hydropower Plant



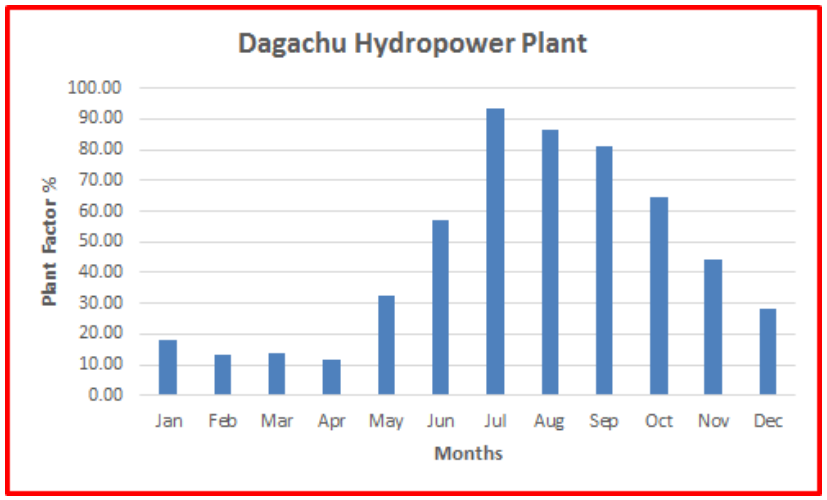
Graph: 2.2.3 Plant factor of Tala Hydropower Plant



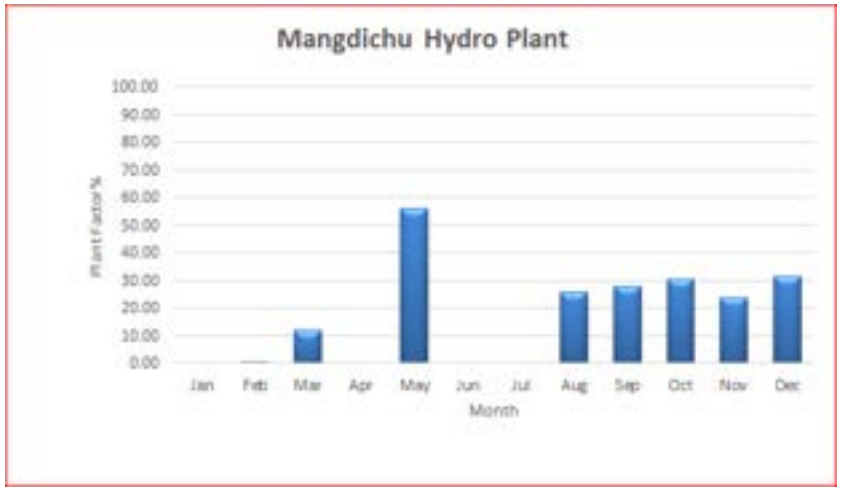
Graph: 2.2.4 Plant factor of Kurichhu Hydropower Plant



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

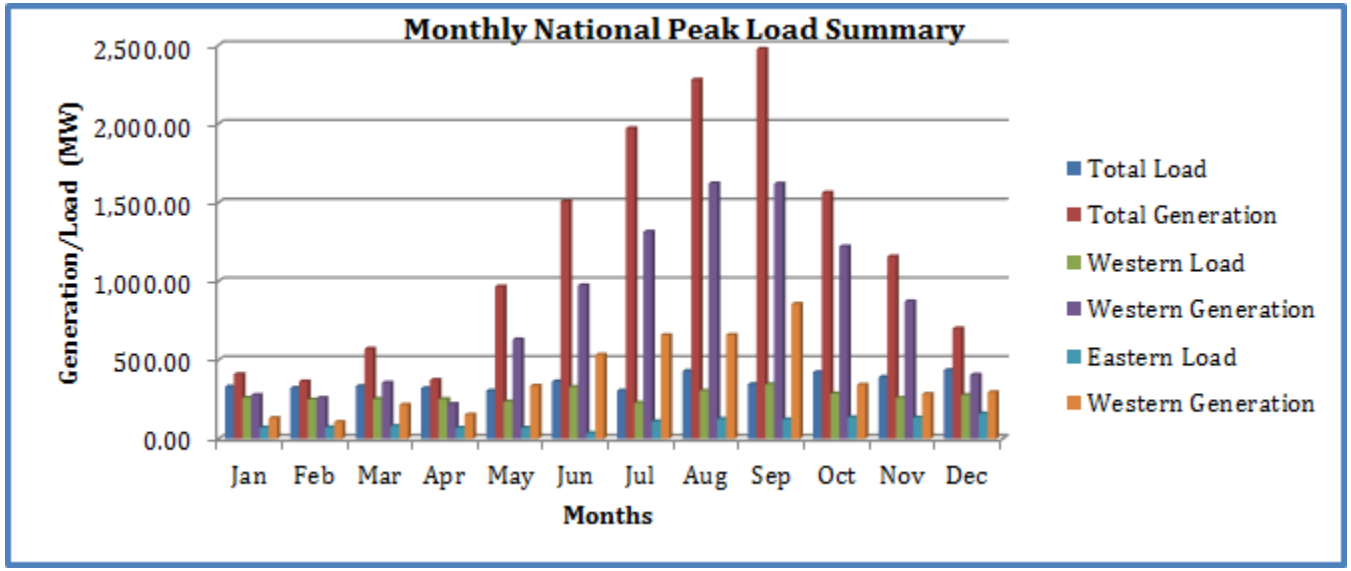
The national coincidental peak load for the year was recorded 43535 MW (Increased by 16 % compare to 2020 (374.53 MW)) on December 27, 2020 at 18:02:18 Hrs. using method-2 (sum of all feeder loading at hydropower plant minus sum of export/import). The main factor contributing towards the increase in Bhutan peak load in 2021 could be because of more production by the industries numbers of new substations came up in 2020.

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	Generation	Load	Generation	Load	Generation
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	72.76	104.90
3	Mar	14-Mar-21	19:00	332.75	570.68	252.60	355.78	80.16	214.90
4	Apr	14-Feb-21	19:00	320.23	372.57	251.62	219.29	68.93	153.28
5	May	6-May-21	19:00	304.53	966.50	235.12	630.70	69.41	335.80
6	Jun	28-Jun-21	22:00	362.79	1,506.50	328.00	973.60	34.79	532.90
7	Jul	6-Jul-21	20:00	303.69	1,971.76	227.70	1,314.02	110.52	657.74
8	Aug	15-Aug-21	21:00	429.77	2,280.06	304.00	1,620.83	125.77	659.23
9	Sep	2-Sep-21	19:00	345.54	2,475.19	345.00	1,619.82	123.49	855.37
10	Oct	30-Oct-21	18:00	422.69	1,562.45	286.94	1,220.36	135.75	342.09
11	Nov	7-Oct-21	18:00	391.05	1,156.09	257.55	872.44	133.50	283.65
12	Dec	26-Dec-21	18:00	435.35	700.94	276.64	405.53	158.70	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



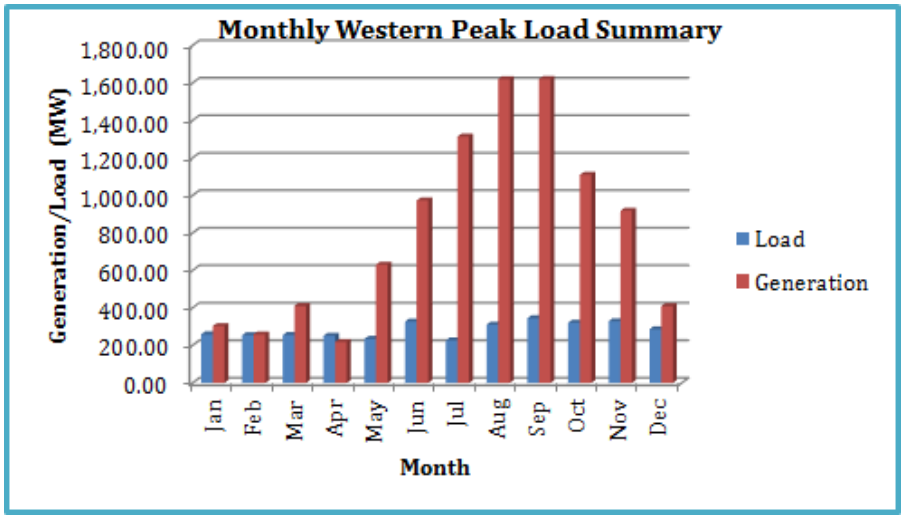
3.2 WESTERN GRID PEAK LOAD

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	8-Jan-21	19:00	259.54	303.82
2	Feb	6-Feb-21	19:00	254.95	258.85
3	Mar	21-Mar-21	19:00	256.08	410.23
4	Apr	14-Feb-21	19:00	251.30	219.29
5	May	6-May-21	19:00	235.12	630.70
6	Jun	28-Jun-21	22:00	328.00	973.60
7	Jul	9-Jul-21	16:00	227.70	1,314.02
8	Aug	15-Aug-21	14:00	311.01	1,620.45
9	Sep	2-Sep-21	19:00	345.00	1,621.18
10	Oct	7-Oct-21	22:00	321.48	1,110.01
11	Nov	8-Oct-21	9:00	329.21	917.96
12	Dec	27-Dec-21	18:00	286.78	409.31
Western Peak Load of the year (MW)				345.00	

Graph: 3.2.1 Monthly western peak load and corresponding generation



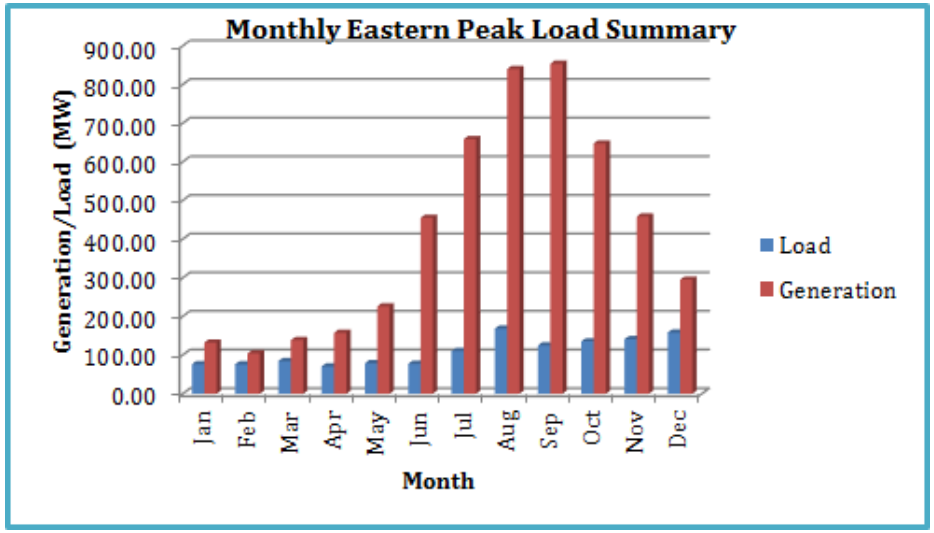
3.3 EASTERN GRID PEAK LOAD

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	17-Jan-21	18:00	76.54	132.33
2	Feb	4-Feb-21	19:00	76.28	104.76
3	Mar	22-Mar-21	19:00	84.70	139.13
4	Apr	21-Apr-21	19:00	70.94	157.65
5	May	3-May-21	19:00	79.10	226.39
6	Jun	14-Jun-21	20:00	77.56	455.26
7	Jul	1-Jul-21	17:00	110.52	658.77
8	Aug	21-Aug-21	19:00	168.54	840.26
9	Sep	1-Sep-21	19:00	125.12	854.17
10	Oct	30-Oct-21	18:00	135.75	647.46
11	Nov	4-Oct-21	7:00	141.42	458.84
12	Dec	26-Dec-21	18:00	158.70	295.41
Eastern Peak Load of the year (MW)				168.54	

Graph: 3.3.1 Monthly eastern peak load and corresponding generation



4.0 EXPORT AND IMPORT OF ELECTRICITY TO/FROM NEIGHBORING COUNTRIES

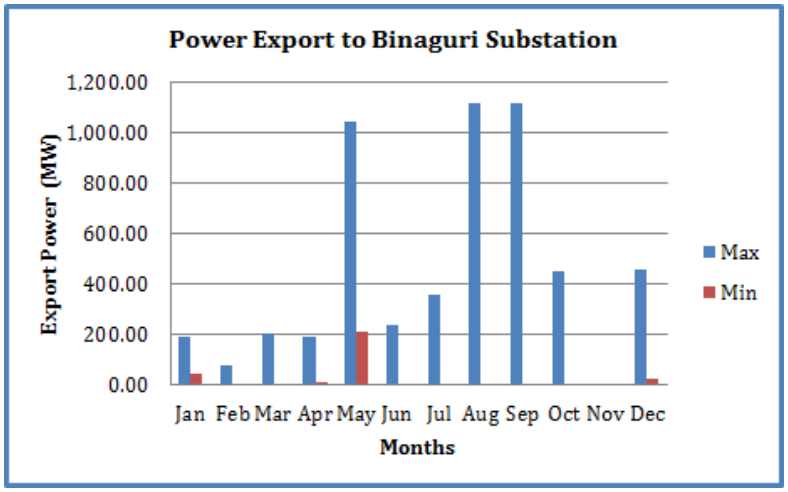
4.1 EXPORT OF ELECTRICITY TO NEIGHBORING COUNTRY

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.

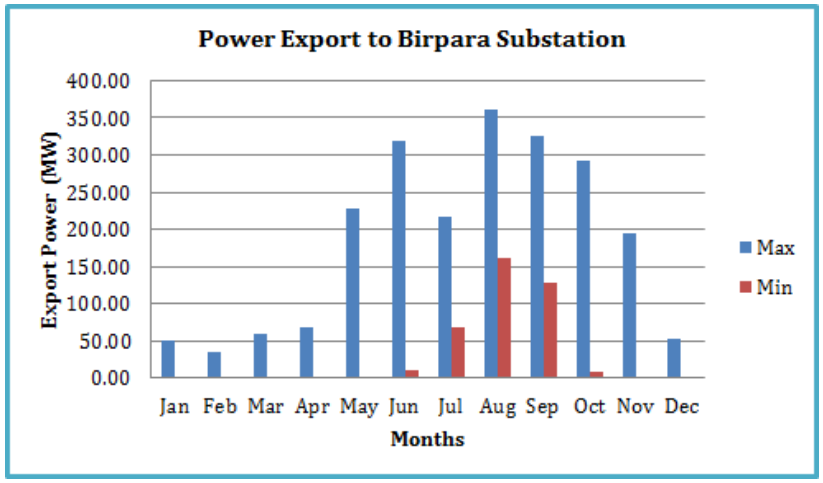
Table: 4.1.1 Monthly power export summary

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

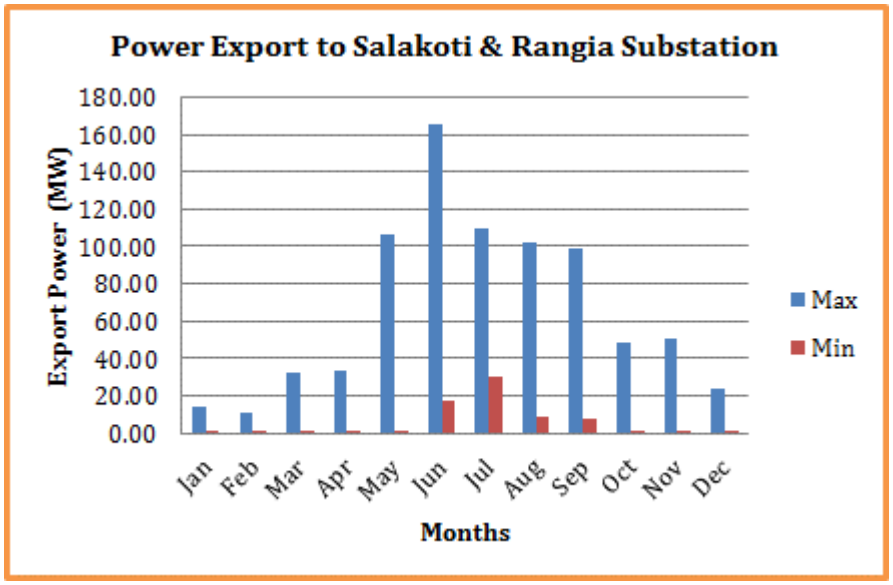
Graph: 4.1.1 Monthly power export to Binaguri substation



Graph: 4.1.2 Monthly power export to Birpara substation



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



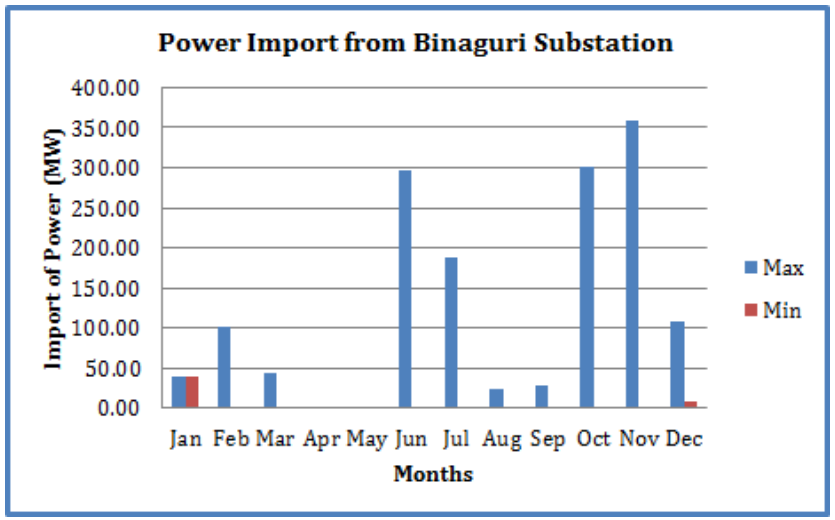
4.2 IMPORT OF ELECTRICITY FROM NEIGHBORING COUNTRY

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.

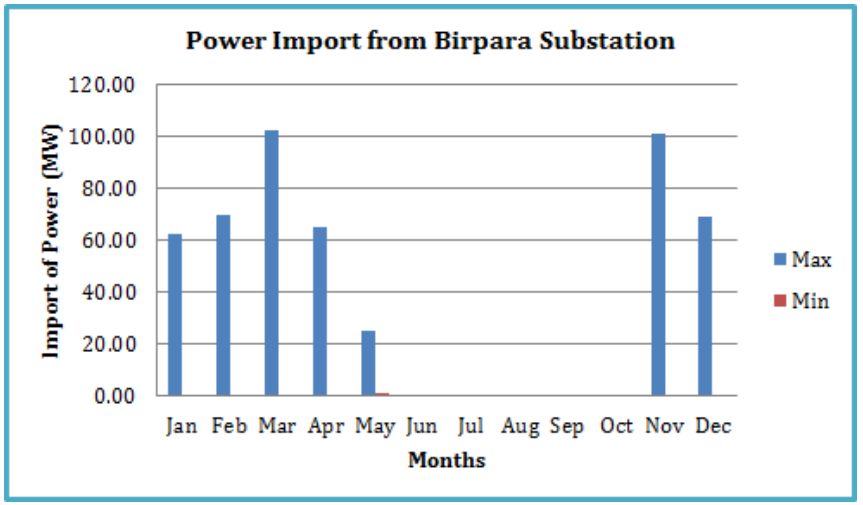
Table: 4.2.1 Monthly power import summary

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
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
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

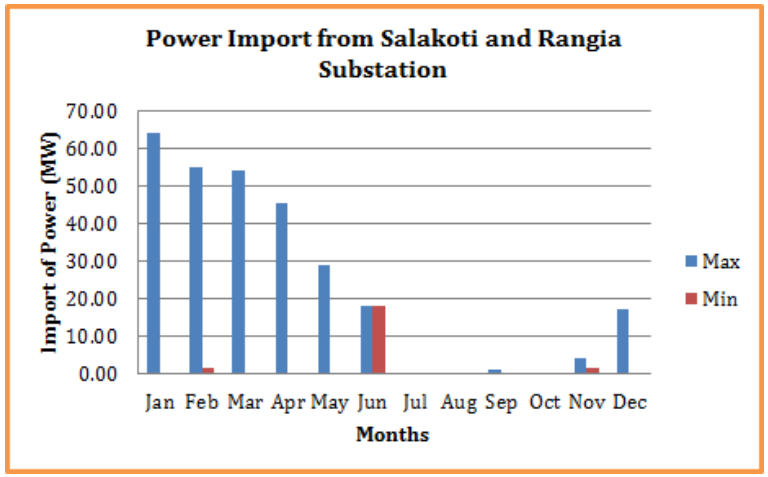
Graph: 4.2.1 Power import from Binaguri substation summary



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

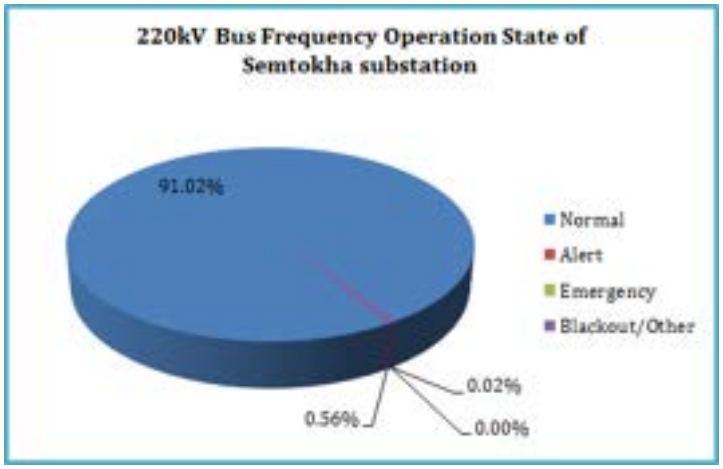
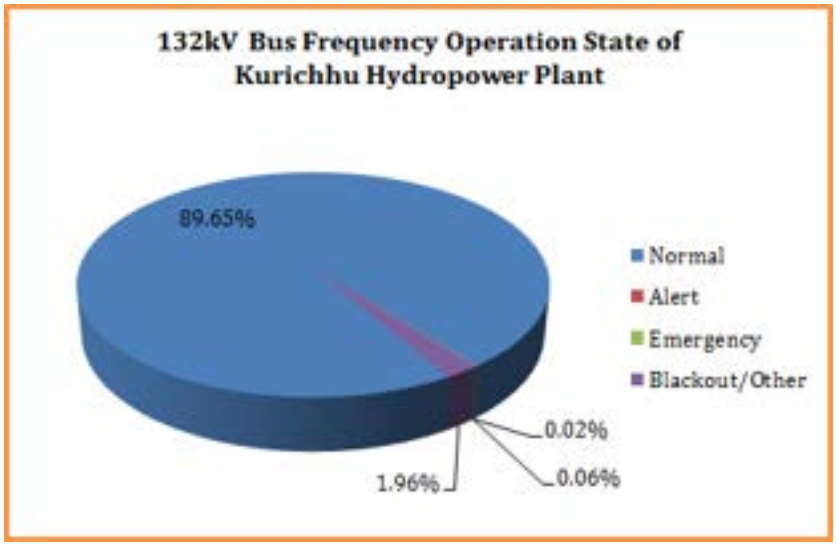


Table: 5.0.2 Frequency profile at Kurichhu Hydropower plant

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:

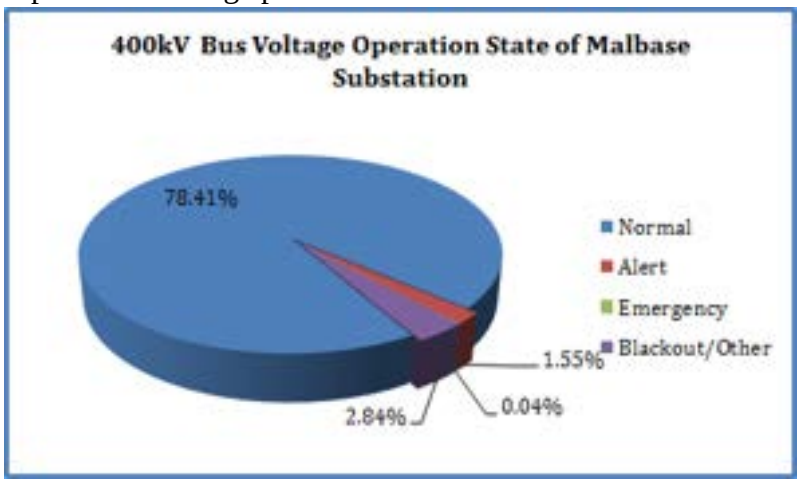
1. *Normal state*
   The voltages at all connection point are within the limits of 0.95 times and 1.05 times of the normal values
2. *Alert state*
   The voltage at all connection points are outside the normal limit but within the limits of 0.9 times and 1.1 times of the normal values
3. *Emergency state*
   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 Nangkhor 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: 6.0.2Voltage profile at Malbase substation at 220kV bus

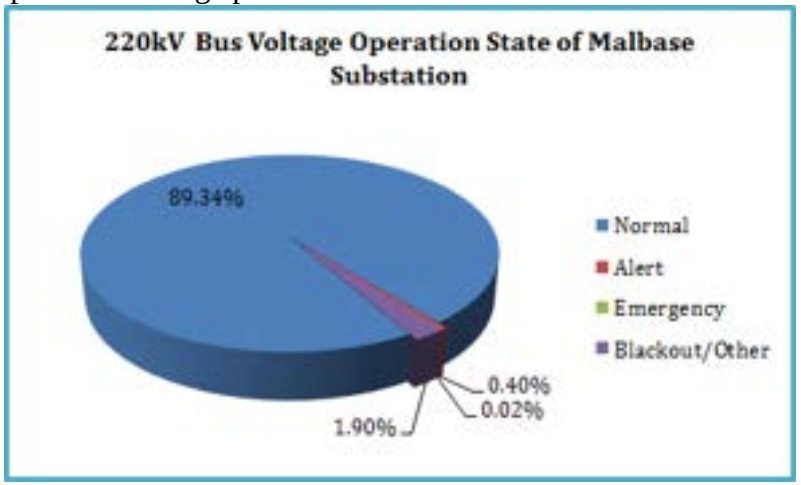
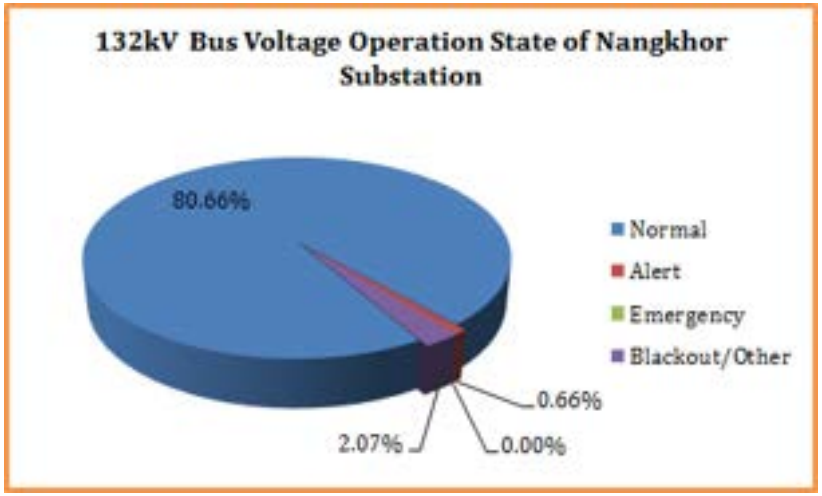


Table: 6.0.2 Voltage profile at Nangkhor substation

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 Nangkhor 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 GIRD CODE REGULATION

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

Annexure- I

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 Kilikhar 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	8:50	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	8:50	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:1193(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,.frd found normal
4. 132/33/11kV Nangkhor 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 EDMT O/C Relay-50A,51A,50C,51C & tripping relay 86 operated.	Nangkor Substation	Tripped while test charging 33kV Wamrong Feeder.
2	26.01.2021	14:10 hrs	26.01.2021	16:02 hrs	1	2.34		Nangkor-Ngangkam	Nangkor-Ngangkam line	NA	-	Ngangkam Substation	'Y' phase Disc Insulator decapped/punctured at Ngangkam Substation. Closed the CB with closing code-1193 from BPSO, Thimphu.
5. 132/33/11kV Ngangkam substation													
NO TRIPPING													
1	28.01.2021	10:14	28.01.2021	10:03	1	-2.15		Nangkhor Ngangkam	Nangkhor Ngangkam	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. Thsering Yangzom, BPSO.
1	21.12.2020	14:39	21.12.2020	15:14	0	-7.2		Gel-Sal	nan	Temporary fault	ip,Vlt-Ph,Zone -1,fir	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 Normalizatio n	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	16.03	07.02.2021	18:10	2:00	2.222	Phuntsholing	Phuntsholing	Breaker failier	Distanc realey appt.	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 opressing code 0117.
4. 132/33/11kV Nangkhor substation												
132kV Feeder												
1	03.02.2021	15:08 hrs	03.02.2021	16:44 hrs	1	0.84	132/33kV, 5MVA TrfI	132/33kV, 5MVA TrfI	NA	-	Nangkor Substation	Emergency shut down taken by Substation incharge to attend oil leakage. No supple was interrupted.
2	25.02.2021	13:20 hrs	25.02.2021	13:41 hrs	0	0.45	132/33kV, 5MVA TrfI	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 TrfII	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 Adopted	11kV Deothang feeder	Tripped due to 11kV Deothang feeder fault
6. 132kV Motanga substation												
1	2/1/2021	14.15 hrs	2/1/2021	14.28 hrs	..	0.05	15MVA anan-1	..	Tripped on Fault	86A-optd	Motanga ss	CB tripped while charging of transformer at Anata end informed BPSO and charged transformer at 14.30hrs from our end.
2	2/1/2021	16:00 hrs	2/1/2021	16:10hrs	..	4.5	Deothang SS incomer	..	Tripped on Fault	86A & 86B OPTD,OC,51 at our end	Motanga ss	informed BPSO,with code no. 1260 CB cleared at 16:10hrs from our end.
3	2/1/2021	16:00 hrs	2/1/2021	16:20hrs	..	15.30	Motanga-Rangia SS	..	Tripped on Fault	86A & 86B OPTD,OC,51 at our end	Motanga ss	informed BPSO,with code no.86,DC 89t 1262,86,DC code 102,86,93,DC 7644 CB closed at 16:20hrs from our end.
4	2/1/2021	16:00 hrs	2/1/2021	17:12hrs	1	1.08	Motanga-Phuntsholthang SS	..	Tripped on Fault	86A & 86B OPTD,OC,51 at our end	Motanga ss	informed BPSO,with code no. 1265 CB closed at 17:12hrs from our end.
1. 400/220/132/33kV Jigmeling Substation												
Sl. No.	Date of Tripping	Time of Outages/ Time of Tripping	Date of Normalizatio n	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	14:17hrs	08.02.2021	14:46hrs	0	101.08	MIPA line 2	Alipurduar SS	Line-Earth Fault	Main-1 = R,YABph -Ground Pickup and DTT trip Main-2 = R,YABph pick up	Main 1 - 92.8km Main 2 - 92.1km	
2	14.02.2021	11:19 hrs	14.02.2021	12:56 hrs	1		Alipur CKT1	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	81.86	MIPA line 3	Alipurduar SS	Line-Earth Fault	Main-1 = Rph pickup, DTT trip, Main-2 = Rph pick up	Main 1 = 78.8km Main 2 = 77.8km	
ii) 220 kv and 132 kV												
1	28.02.2021	5:09:0.0hrs	28.02.2021	5:32:10hrs	0	9.79	Tsirang-Jigmeling	Dhajay and Jigmeling substation	phase to phase fault	Main-I: Rph=2.02IKA, Yph=2.02KA, Bph=0.04KA, and Main-II Rph=2053.46ph, Yph=2032.70KA, Bph=16.27KA, FOR BOTH ZONE-1(Z1)-OPTD.	Main-I=4.1KM, Main-II=1.41KM	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-Nangkhor	Deothang-Nangkhor line	NA	Nil	Nangkor s/s	Incomer triped 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-Nangkhor	Deothang-Nangkhor	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-Motanga	Deothang-Motanga	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-Nangkhor	Deothang-Nangkhor	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. Availed 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. Calreged via closing code 1901 BPSO Jangchub
4. 132/33/11kV Nangkhor 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 Narang 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 Narang feeder
3	06.03.2021	12:56 hrs	06.03.2021	16:25 hrs	3	-7.89	Nangkor-Nganglam	Nangkor-Nganglam 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 Nganglam substation												
132kV Feeder												
1	02.03.2021	14:10	02.03.2021	14:15	0	0.56	5MVA transformer II	5MVA transformer II	Over current	O/C blocked	Dechenling Feeder	Trip due to 33kV Dechenling feeder fault.
2	09.03.2021	14:42	09.03.2021	14:45	0	0.050	5MVA transformer II	5MVA transformer II	Over current	O/C blocked	Dechenling Feeder	Trip due to 33kV Dechenling feeder fault.
3	06.03.2021	12:52	06.03.2021	16:25	3	11.19	Nangkhor-Nganglam	Nangkhor-Nganglam	Earth Fault	E/F opted, 86 optd	Nangkhor-Nganglam	Fault Value: [illegible] The feeder was normalized as per the Switch ON code [illegible] by Ms. Tshering Yangzom,BPSO Thimphu.
33kV Feeder												
6. 132kV Motanga substation												
1	3/6/2021	12:58 hrs	3/6/2021	13:10 hrs	_	13.83	Deothang SS incomer	_	Tripped on fault	86A & 86B OPTD,OC/57 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	_	0.09	[illegible]	_	Tripped on fault	O/C at our end	Motanga ss	CB closed at 5:48hrs from our end.
3	3/15/2021	14:40 hrs	3/15/2021	15:20hrs	_	0	33kV Aoleta	_	Hand tripped	_	Motanga ss	Taken shutdown by DCSO for maintenance work at Aoleta end.
4	3/30/2021	19:00hrs	3/30/2021	23:50hrs	_	8.81	Motanga Rangia [illegible]	_	Tripped on fault	86A & 86B OPTD,OC/57 at our end	Motanga ss	Informed BPSO,as per there instruction CB closed at 23:50hrs with code NLDC [illegible] 1906,NLDC india 2137 and NERLDC [illegible] 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	44279	12:12 hrs	44279	12:22 hrs	0 hrs	118.17 MW	MHPA Line 4	Alipurdwar substation	DTT trip while opening line Alipur CH 2 at their end	DTT trip		
4. 132/33/11kV Tingtibi 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

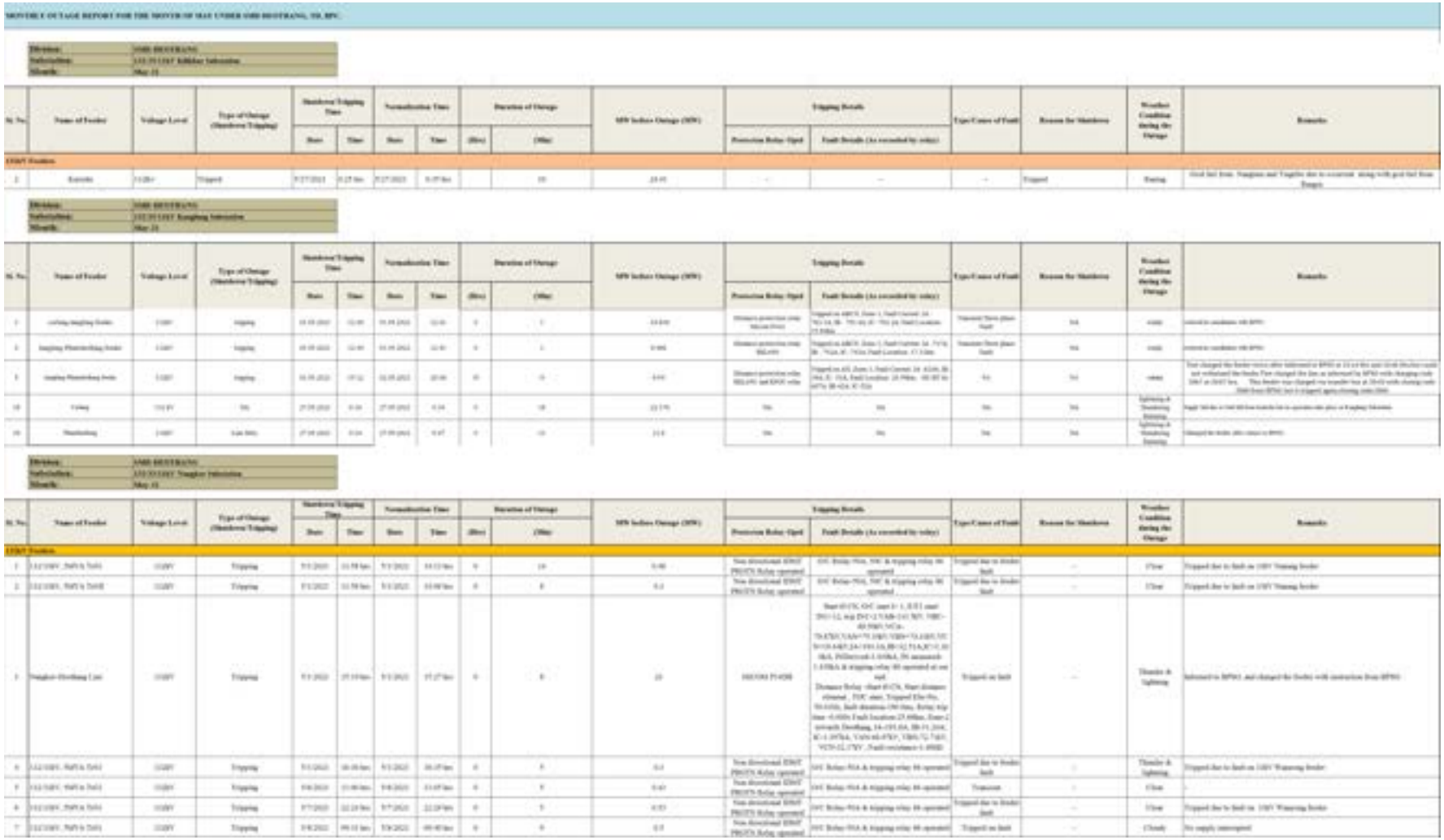
Sl. No.	Date of Tripping	Time of outages	Date of Normalization	Time of fault was cleared	Duration of Outages (Hrs)	MW before outage (MW)	Feeder Name	Name of the Substation/lines affected by the fault	Reasons of fault	Relay operations	Exact location of fault [Line segment/ Substation]	Type of outages	Remarks
1.132/33/11kV Kilikhar 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 Lightening
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 Alightening
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, Iy-601.8A, Ib-720.2A. Distance relay operated with Zone 1, at 17.88KM	Corlung Line	Tripped on fault	fdr normalised after getting clearence from nte. Karma, (engg). BPSO. At 17:13 hrs.
4	28.04.2022	17:03	28.04.2021	17:14	0:00	9.756	Phuntsholtang	Kanglung	NA	nce relay zone 1 ope	Phuntsholtang line	Tripped on fault	fdr normalised after getting clearence from nte. 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, Iy-57.85A, Ib-821A. Distance relay operated with Zone 2, at 25.71KM	Corlung Line	Tripped on fault	fdr normalised after getting clearence from nte. Karma, (engg). BPSO. At 17:45hrs.
6	28.04.2021	17:43	28.04.2021	19:56	2:00	9.756	Phuntsholtang	Kanglung	NA	nce relay zone 1 ope	Phuntsholtang line	Tripped on fault	fdr normalised after getting clearence from nte. 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 clearence from BPSO.
8	30.04.2021	16.55	30.04.2021	17:16	0:00	9.486	Phuntsholtang	Kanglung	NA	NA	Phuntsholtang line	Tripped on fault	Feeder normalised after getting clearence from BPSO.

4. 132/33/11kV Nangkhor 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 Ø CN, Trip Ø 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 Ø CN, Trip Ø 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 Nanang feeder & Nanang 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 Nanang feeder & Nanang 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 Ø CN, Trip Ø 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 Diff/ref 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 desired-455.8A. Informed to BPSO & charged the feeder as per their instruction.
14	30.04.2021	16:57 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 our 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 our 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, Thinphu 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 Phuntsothang line isolator got burnt. So firstly control the fire at isolators by hand tripping CB for Deothang,Rangia and Phuntsothang feeders and then 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, Thinphu as instructed to closed CB with code no.NLDC IBt-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 Phuntsothang isolators and both line charged from our end.
7	28/04/201	08:25hrs	28/04/201	13.26hrs	5 hrs	-8.97	tanga-Phuntsothang line		Hand tripped	_	Motanga ss	_	Informed BPSO , Thinphu 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-Phuntsothang line		Tripped on Fault	86A & 86B OPTD,OC/EF at our 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-Phuntsothang line		Tripped on Fault	86A & 86B OPTD,OC/EF at our 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 our 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-Phuntsothang line		Tripped on Fault	86A & 86B OPTD,OC/EF at our 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, 132kv Corlung Substation and 33 kV T/Yantse Feeder	Incoming supply fail	NA	Kurichhu Supply fail	Grid fail	At 14:58 hrs Incomming supply from khilihar substation fail and Corlung substation was blakout but no breaker tripping has occoured at Corlung substation.
7. 132/33 kV Phuntsholing 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	21:37		10.50	V incomer Kanglung	Kanglung Line	3OPTD (R,Y,B Phas	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	3OPTD (R,Y,B Phas	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)

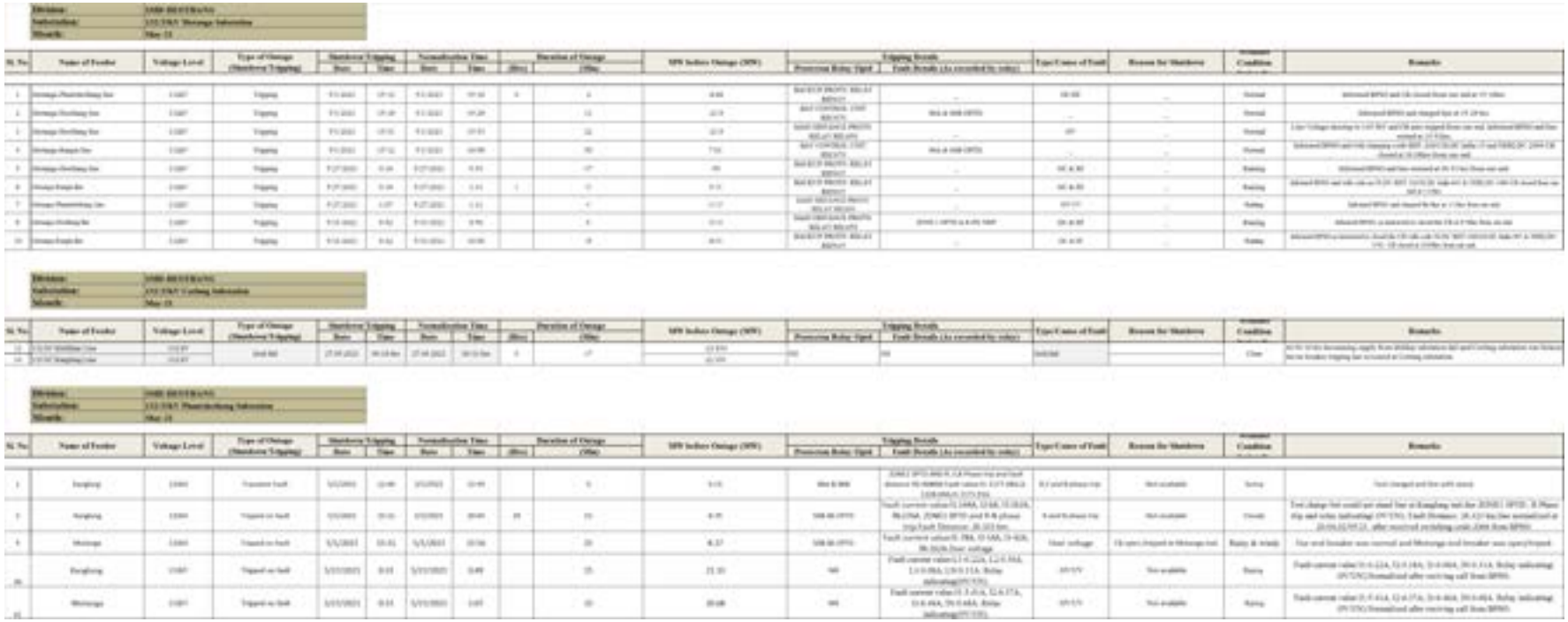
i) 400kV													
1	22.04.2021	12:44 hrs			0	64.1MW	MHPA Line-2	Jigmeling Substation	DTT trip. RYB phase Tripped.			Transient Fault (Lightening and flashering)	
2	30.04.2021	02:50 hrs	30.04.2021	14:57 hrs			Shunt Reactor-1		Rphase-Ground fault			Transient Fault (Lightening and flashering)	
ii) 220 kv and 132 kV													
1	10.04.2021	19:28hrs	10.04.2021	19:42hrs		0	ICT-1 16.8	80MVA ICT1 & 2	Jigmeling s/s	LV SEF optd	50N/51N Trip. (Ia=0.51kA,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 flashering	Both ICT1&2 Trip at the sametime.
2	22.04.2020	12:02hrs	22.04.2021	01:49hrs		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 flashering	
3	22.04.2021	12:23hrs	22.04.2021	12:23hrs		0	1.13MW	Daga pela Feeder	Jigmeling s/s	Line Fault	TAIBphase tripped, zone 1 optd, Dist. 21.68km	Dist. 21.68km	Transient (lightning and flashering	
4	30.04.2021	15:20hrs	30.04.2021	15:34hrs		0	29.33	132kV Jigmeling-Gelephu Line	Jigmeling & Tingkhi	Ground fault	main 1 = Relay General Trip and R & Y phase with ground fault trip	Distance -65.9km	Transient	
2. 220/66/33kV Dhanjey Substation													
i) 66kV and above													
1	22.04.2021	00:01 Nday	22.04.2021	1.46.34hrs		1	12.3	Jigmeling Feeder	Dhanjey SS	main 1=Ie=0.47kA, P86.1 &2, Distance at Main 1=16.4km, Mai Tripped			whole Tsirang is black out as line overdirect extend from Jigmeling since there has
3. 132/66/33/11kV Gelephu Substation													
i) 66kV and above													
1	04.04.2021	17.23hrs	05.04.2021	18.24hrs		0.6	132kv Sal-Gel	132kv Sal-Gel	bad weather	IR=1098 MA,C=1.5	Salakati line		Charging Code; NLDC BTN=1927, NLDC IND=191 & NERLDC=215
2	04.04.2021	17.23hrs	05.04.2021	13.08hrs	19	2	132kv Gel-Jig	132kv Gel-Jig	bad weather	no relay opperated at one end	132kv Gel-Jig		Charging Code; BPSO=1929
3	08.04.2021	01.48hrs	08.04.2021	04.18hrs		3.6	132kv Sal-Gel	132kv Sal-Gel	bad weather	Dist protection,REL 670,General trip,RBy-phase,Zone 1,Dist.61.92km towards Salakati ss.	Salakati line		Charging Code; NLDC BTN=1942, NLDC IND=423 & NERLDC=471.
4. 132/33/11kV Tsirlu Substation													
i) 66 kV and Above													
3.00	44300.00	0.10		44300.00	0.11	0.00	11.04	132kV Tingkhi-Nanglam	132kV Tingkhi-Nanglam	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Location:17.25KM, Fault Zone-1.	132kV Tingkhi-Nanglam	Temporary	
3.00	44316.00	0.64		44316.00	0.65	0.00	-28.74	132kV Tingkhi-Jigmeling	132kV Tingkhi-Jigmeling	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Location:3.21KM, Fault Zone-1.	132kV Tingkhi-Jigmeling	Temporary	
3.00	44316.00	0.67		44316.00	0.68	0.00	21.13	132kV Tingkhi-Nanglam	132kV Tingkhi-Nanglam	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Location:1.69KM, Fault Zone-1.	132kV Tingkhi-Nanglam	Temporary	
3.00	44316.00	0.68		44316.00	0.70	0.00	4.10	132kV Tingkhi-Yurmoo	132kV Tingkhi-Yurmoo	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Location:2.75KM, Fault Zone-1.	132kV Tingkhi-Nanglam	Temporary	
5. 132/33kV Yurmoo Substation													
i) 66kV & Above													
1	30.04.2021	0.694528	30.04.2021		0.696528	0	4	132kV, Tingkhi Line	Yurmoo Ss	OV	Distance relay trippe	Nill		Temporary
6. 220/33kV Daga pela Substation													
i) 66kV & Above													
1	22.04.2021	12:47:41	22.04.2021	0.045139	0	0.6	220KV Daga pela-Jig	Daga pela Substation	Over Voltage, IA=7.36 A, 86B, Started,g-			Transient Fault	Over voltage trip

May 2021



Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Time		Normalization Time		Duration of Outage		MW Indies 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 /Dpid	Fault Details (As recorded by relay)				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Time		Normalization Time		Duration of Outage		MW Indies 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 /Dpid	Fault Details (As recorded by relay)				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/ Tripping)	Shutdown/ Tripping Date	Shutdown/ Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details Protection Relay/ Signal	Tripping Details Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Condition	Remarks
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/ Tripping)	Shutdown/ Tripping Date	Shutdown/ Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details Protection Relay/ Signal	Tripping Details Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Condition	Remarks
11																
12																

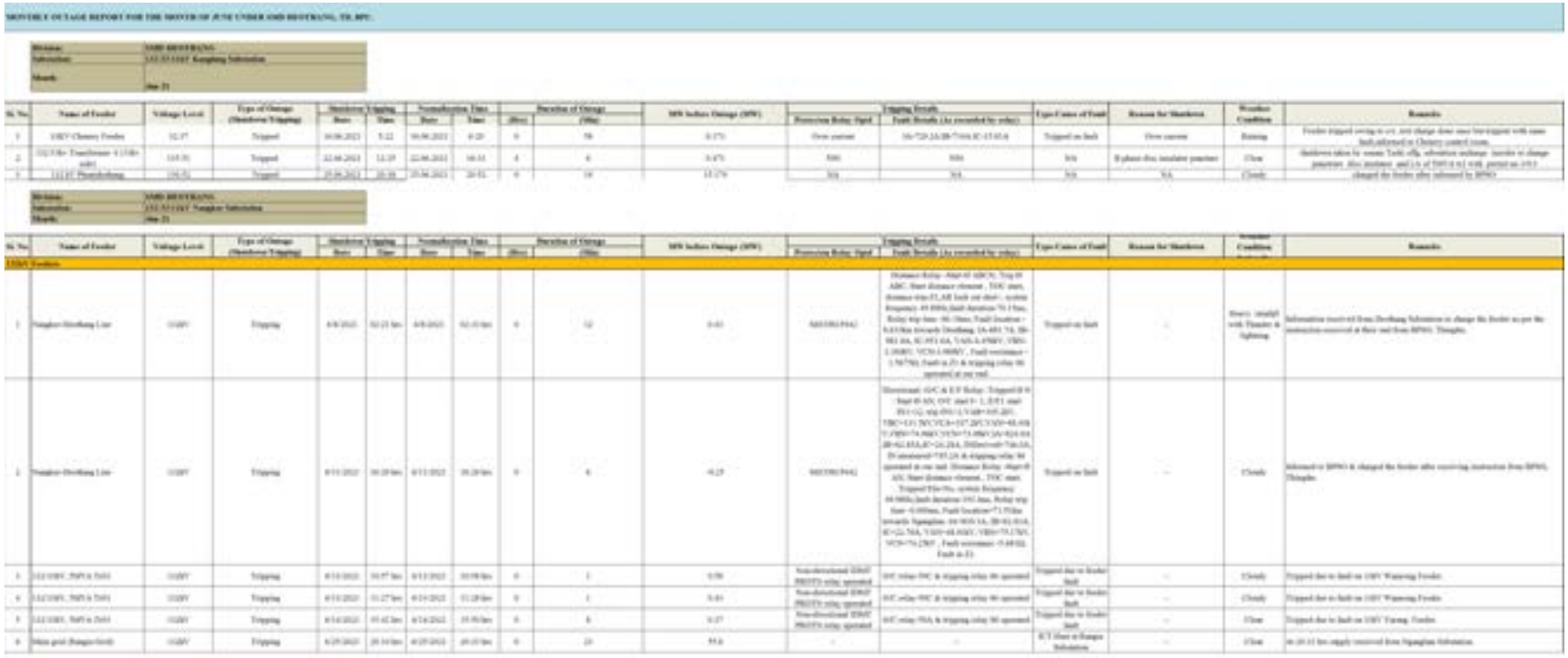
Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/ Tripping)	Shutdown/ Tripping Date	Shutdown/ Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details Protection Relay/ Signal	Tripping Details Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Condition	Remarks
1																
2																
3																
4																
5																

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/Bays Affected by the Fault	Reasons of Fault	Relay Operations	Fault Location(KM)	Type of outages	Remarks
i) 66kV Above													
1	05.05.2021	12:21hrs	05.05.2021	12:34hrs		-12.990	220kV Jigmeling – Tsirang feeder	Jigmeling SS	Ground fault	Main 1(B ph pick up, zone 1 trip) Main 2(B ph pick up, zone 1 trip)	14.5km		heavy rainfall, thunder and lightning
2	05.05.2021	12:22hrs	05.05.2021	12:34hrs		1.29	220kV Jigmeling – Dagapela feeder	Dagapela SS	Ground fault	Main 1(B ph pick up, zone 1 trip) Main 2(B ph pick up, zone 1 trip)	main 1 - 15.9km 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 – Tsirang feeder	Jigmeling SS	Ground fall	Main 1 (B &B ph pick up, z1 trip) Main 2(B &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	14:51hrs	0	1.33	220kV Jigmeling – Dagapela feeder	Dagapela 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-	Tingtibi SS	Earthfault	Yphase pick up		No DR and relay tripped outfi	

2. 220/66/33kV Dhajay Substation												
i) 66kV and above												
1	05.05.2021	12:40hrs	05.05.2021	15:06:94hrs	2	17.01	Jigmeling line	Dhajay S/stn I-Ia=1.77KA, Ib=0.01KA, 86.1 &2, Distance relay Main I&II		Main I=12.4km, Main II=3, Tripped		whole Tsirang 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, Ir=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=1A, Ic=17.12A, Ir=14.92A	MICOMP122	Line segment	Tripped	Feeder restored after O&M head ,ESD Tsirang confirmed line clearance
4. 132/33/11kV Tsirilo Substation												
i) 66 kV and Above												
1	5/1/2021	16:00	5/1/2021	16:05	0	16.2700	to Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Loaction:32.90KM,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
2	5/5/2021	13:57	5/5/2021	14:01	0	12.1000	to Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Loaction:39.7KM,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
3	5/13/2021	13:57	5/13/2021	14:07	0	4.5700	to Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Loaction:15.9KM,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
4	5/28/2021	23:45	5/28/2021	23:55	0	20.8000	to Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay Trip phase ABC,Fault Loaction:32.44KM,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
6. 220/33kV Dagapela Substation												
i) 66kV & Above												
1	05.05.2021	0.582638889	05.05.2021	0.620138889	0	-0.94	220KV Dagap	Dagapela	No datas recorded in Relay on ff 86 A, 86B		-	Transient Fault	No datas on relay at ts

June 2021



Division:	[illegible]
Substation:	132/33/11kV Nganglam Substation
Month:	Jun-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details: Protection Relay Type	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
132kV																
1	132/33kV 5MVA Transformer-I	33kV	Tripping	01.06.2021	19:04	01.06.2021	19:06	0	2	1.147	Micom & ERMT E/F & O/C relay	Earth fault	Transient Earth fault		Clear	
2	132/33kV 5MVA Transformer-I	33kV	Tripping	02.06.2021	05:47	02.06.2021	05:54	0	7	0.975	Micom & ERMT E/F & O/C relay	Earth Fault	[illegible] feeder fault		Clear	Test charged and withstood successfully.
3	132/33kV 20MVA Transformer-II	33kV	Tripping	02.06.2021	05:47	02.06.2021	05:54	0	7	0	Micom & ERMT E/F & O/C relay	Earth Fault	NCT operated for 33kV side		Clear	
4	132/33kV 20MVA Transformer-II	33kV	Tripping	03.06.2021	17:32	03.06.2021	17:38	0	6	0.461	Micom & ERMT E/F & O/C relay	Over Current	Tripped due to 33kV [illegible] Feeder	Rainy & Thunderstorm		
5	132/33kV 5MVA Transformer-I	33kV	Tripping	06.06.2021	01:37	06.06.2021	01:40	0	3	0.502	Micom & ERMT E/F & O/C relay	Earth Fault	Tripped due to 33kV Dechenling Feeder		Clear	
6	Nganglam-Tingtibi	132kV	Tripping	08.06.2021	02:21	08.06.2021	02:27	0	6	-27.12	Distance relay Micom P442	[illegible]	[illegible]		Heavy Rainy & Thunderstorm	Nganglam-Tingtibi CB operated at Tingtibi end and [illegible] CB operated at [illegible] end respectively.
7	Nganglam-Tingtibi	132kV	Tripping	08.06.2021	02:45	08.06.2021	02:53	0	8	-27.12	Distance relay Micom P442	[illegible]	Over Current		Clear	
8	Nganglam-Tingtibi	132kV	Tripping	08.06.2021	02:58	08.06.2021	03:01	0	3	-27.12	Distance relay Micom P442		[illegible]		Heavy Rainy & Thunderstorm	Nganglam-Tingtibi CB [illegible] at Tingtibi end & [illegible] CB operated at [illegible] end.
9	132/33kV 5MVA Transformer-I	33kV	Tripping	08.06.2021	10:04	08.06.2021	10:11	0	7	0.69	Micom & ERMT E/F & O/C relay	Earth Fault	33kV Dechenling feeder fault		Clear	
10	Nganglam-Tingtibi	132kV	Tripping	09.06.2021	21:29	09.06.2021	08:25	0	56	-26.50	Distance relay Micom P442					
11	Nganglam-Tingtibi	132kV	Tripping	12.06.2021	[illegible]	13.06.2021	[illegible]	0	10	-25.50	Distance relay Micom P442	Earth Fault	[illegible]		Clear	Feeder charged after confirmation with Tingtibi and NLDC with closing code [illegible] by [illegible]
12	132/33kV 5MVA Transformer-I	33kV	Tripping	14.06.2021	11:48	14.06.2021	11:50	0	2	0.012	Micom & ERMT E/F & O/C relay	Earth Fault	Due to 33kV Dechenling Feeder fault		Clear	
13	132/33kV 5MVA Transformer-I	33kV	Tripping	15.06.2021	02:57	15.06.2021	02:59	0	2	0.051	Micom & ERMT E/F & O/C relay	Earth Fault	Due to 33kV Dechenling Feeder fault		Rainy	
14	DCP	132kV	Tripping	16.06.2021	16:29	16.06.2021	16:30	0	1	12.74		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 [illegible] while rectifying the above problem coordination with [illegible] maintenance [illegible] Incidentally CB tripped at our end.
15	Nganglam-Tingtibi	132kV	Tripping	18.06.2021	17:08	18.06.2021	18:27	2	40	10.25	Distance relay Micom P442	[illegible] Fault Zone 1 Fault location [illegible]	[illegible] at Tingtibi end		Clear	Supply restored after completing the [illegible] changing work at Tingtibi end and coordination in BPSO.
16	132/33kV 5MVA Transformer-I	33kV	Tripping	20.06.2021	21:22	20.06.2021	21:24	0	2	1.017	ERMT Earth fault & Over current relay	Over Current	33kV Dechenling feeder fault	Heavy Rainy & Thunderstorm		
17	132/33kV 5MVA Transformer-I	33kV	And tripped	30.06.2021	18:20	30.06.2021	18:25	0	5	0.867	Micom & ERMT E/F & O/C relay	NA	Abnormal sound from 33kV panel		Clear	

Division:	[illegible]
Substation:	132/33kV Motanga Substation
Month:	Jun-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details: Protection Relay Type	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Weather Condition	Remarks
1	132/33kV Transformer	132kV	Tripping	6/1/2021	8:48	6/1/2021	8:54	0	6	0.32	BACKUP PROTN. RELAY REF615	86A OPTD	OC & EF	_	Normal	Informed BPSO and CB closed from our end at 08:54hrs.
2	Motanga-Deothang line	132kV	Tripping	6/16/2021	2:20	6/16/2021	2:28		8	-50.44	BACKUP PROTN. RELAY REF615	86A & 86B OPTD, R-PH TRIPS	OC & EF	_	Raining, Thunder and lightning	Informed BPSO and line restored at 2:28 hrs from our end.
3	Motanga-Rangia line	132kV	Tripping	6/16/2021	2:20	6/16/2021	2:45		25	54.70	BACKUP PROTN. RELAY REF615	86A & 86B OPTD, ZONE-1 OPTD,R-PH TRIPS	OC & EF	_	Raining, Thunder and lightning	Informed BPSO and with code no. NLDC [illegible] Indus [illegible] & NERLDC [illegible] CB closed from our end at 2:45hrs.
4	Motanga-Deothang line	132kV	Tripping	6/27/2021	20:38	6/27/2021	20:41		3	-24.5	BACKUP PROTN. RELAY REF615	86A & 86B OPTD	OC & EF	_	Normal	Informed BPSO and line restored at 20:41 hrs from our end.
5	Motanga-Phuentsholing Line	132kV	Tripping	6/27/2021	20:38	6/27/2021	20:46		8	-9.08	BACKUP PROTN. RELAY REF615	86A & 86B OPTD	OC & EF	_	Normal	Informed BPSO and charged the line at 20:46hrs from our end.
6	Motanga-Rangia line	132kV	Tripping	6/27/2021	20:38	6/27/2021	11:48	1	10	8.37	MAIN DISTANCE PROTN. RELAY REL650	86A & 86B OPTD	OC/E/F	_	Normal	Informed BPSO as instructed to closed the CB with code NLDC [illegible] Indus [illegible] & NERLDC [illegible] CB closed at 11:48hrs from our end.
7	Motanga-Rangia line	132kV	Tripping	6/28/2021	3:20	6/28/2021	2:27	1	7	8.37	Hand tripped	_	_	_	Normal	As per the BPSO instruction CB hand tripped and kept under shutdown due to grid problem at Rangia end. BPSO instruct to close CB with code no. NLDC [illegible] Indus [illegible] and NERLDC [illegible] CB closed at 2:27hrs from our end.

Division:	[illegible]
Substation:	132/33kV Corlong Substation
Month:	Jan-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 Signal	Fault Details (As recorded by relay)				
1	132/33 Kv Gelephu-Corlong Line	132 kV	Incoming supply fail	27-01-2021	20:58 hrs	27-01-2021	20:58 hrs	0	20	21.109	Nil	There was no incoming supply due to grid fail	Grid fail		Close	At 20:58 hrs incoming supply from Gelephu substation fail and Corlong substation was shutdown but no breaker tripping has occurred at Corlong substation.

Division:	[illegible]
Substation:	132/33kV Phuentsholing Substation
Month:	Jan-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 Signal	Fault Details (As recorded by relay)				
1	Kanglung feed (BUS-A)	11kV	Grid Fail	6/27/2021	20:10	6/27/2021	20:54		44	7.10	132/33 kV Trip	fault value:I1=1600A,I2=2197A,I3=3476A,I0=47A	Nill	Not available	close	line charged after after called receive from BPSO
2	Motanga feed (BUS-A)	11kV	Grid Fail	6/27/2021	20:10	6/27/2021	20:45		7	5.80	132/33 kV Trip	fault value:I1=1121A,I2=1564A,I3=1871A,I0=51A	Nill	Not available	close	line charged after after called receive 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
i) 66kV Above													
	2-Jun-21	21.18 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: 10km	Transient	
	3-Jun-21	15.3 Hrs	3-Jun-21	15.4Hrs	0	196.16	400kV MJ 2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Fault loop L2L1, Zone 1 trip. Fault distant (27.5km)	Transient	
	15-Jun-21	01.46 hrs	15-Jun-21	02.41 hrs	0	303.24	400kV Interconnector Alipurduar (R)-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=0.45kA, Ib=1.31kA, Ic=1.07kA. Main-2, Ia=0.44kA, Ib=1.3kA, Ic=1.08kA.	
	15-Jun-21	01.40 hrs	15-Jun-21	05.21 hrs	3	303.24	400kV Interconnector Alipurduar (R)-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 130.1km.	Phase-Phase fault, Main-1, Ia=0.45kA, 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 & 5431			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	OV		
	16-Jun-21	16.42 hrs	16-Jun-21	17.1Hrs	0	-282.11	400kV MJ1			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 tower Alipurduar 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 71.7km.	Ia-1.84kA	

	29-Jun-21	00:23 hrs	29-Jun-21	07:36 hrs	1	-21.81	500MVA ICT			7SJ8031-5EB90-1FC0 DD, SIPROTECT 7UT61	67/67N trip		
	29-Jun-21	15:50 hrs	29-Jun-21	15:50 hrs	0	204.25	400kV Quad moose Alipurduar Line-2			Distance Relay: SIPROTECT 7SA52 & SIPROTECT 7SA611	Main-1, Yph pick , Fault distance 63.1km. Main-2, Yph pick, Fault distance 63.1km.		
	6-Jun-21	11:53 hrs	7-Jun-21	12:17 hrs	0	0.84	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 & L1), Ia=0.02kA, Ib=2.51kA & Ic=2.51kA	
	7-Jun-21	00:43 hrs	7-Jun-21	00:54 hrs	0	0.84	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=2.49kA, Ib=2.49kA & 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	08:31 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	10:10 hrs			Bus-coupler				50/51N		
	12-Jun-21	10:04 hrs	12-Jun-21	10:10 hrs	0	-133.34	80 MVA ICT-1			7SJ8022-5EB90-1FA0/CC & 7SJ8041-5EB90-1FC0/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	17:08 hrs	18-Jun-21	17:23 hrs	0	51.89	80MVA ICT 1 & 2			7SJ8022-5EB90-1FA0/CC & 7SJ8041-5EB90-1FC0/CC	LV SEF trip, 50N-1 trip		
	19-Jun-21	10:02 hrs	19-Jun-21	10:48 hrs	0	ICT-1: -35.5, ICT-2: -35.8	80MVA ICT 1 & 2			7SJ8022-5EB90-1FA0/CC & 7SJ8041-5EB90-1FC0/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	06:29 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 (L2L1)	
	3-Jun-21	18:39 hrs	3-Jun-21	18:44 hrs	0	13.79	132kV Gelephu Feeder			Distance Relay: SIPROTECT 7SA52 & REL 670	Fault loop L1,L2,L1 Zone 1 trip Fault distant (20.3km)	Transient	
	15-Jun-21	02:41 hrs	15-Jun-21	02:51 hrs	0	0	132kV Nagshi Feeder			Distance Relay: SIPROTECT 7SA52 & REL 670	Main-1, R/Bph pick up		
	18-Jun-21	17:09 hrs	18-Jun-21	19:19 hrs	2	40.67	132kV Nagshi Feeder				Main-1, Rph pick up Fait Dist(75.4km)	Fault Loop(L1-E) Fault current 1.1-1.3kA	
2. 220/66/33kV Dhajay Substation													
i) 66kV and above													
	1 15.06.2021	02:05hrs	15.06.2021	02:10hrs	0	6.33	Jigmeling feed Dhajay SS	Main II- Ia=99.41A,139.27A6.1 &2, relay Main II				Tripped	whole Tsirang is black
2	16.06.2021	8:41:07SRS	16.06.2021	8:54:37hrs	0	94.30	Dagachu feed Dhajay SS	Main II- Ia=0.16A,141.9K 86.1 &2, relay Main II				Tripped	whole Tsirang is black
3. 132/66/33/11kV Gelephu Substation													
i) 66kV and above													
1	03.06.2021	18:40hrs	03.06.2021	19:27		12	66 kV-Salakati A	Blackout fr	bad 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	0	5.4	132kv Gel-Sal	non	Shutdown by Salakati ss	non	Salakati line	Temporary	Charging code NLDC IBTN=1035,NLDC IND=215,NERLDC=1104

4. 132/33/11kV Tintibi Substation													
i) 66 kV and Above													
1	6/8/2021	2:20	6/8/2021	8:18	5	16.6600	66 Tingtibi-Nang	Tingtibi-Na	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	66 Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay: Start Phase-N,Trip phase ABC,Fault Location:20.14KM,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
3	6/11/2021	1:46	6/11/2021	2:02	0	42.2600	66 Tingtibi-Nang	Tingtibi-Na	Temporary fault	Distance Protection Relay: Start Phase-ABC,Trip phase ABC,Fault Location:2.03.0MI,Fault Zone-1,	132kV Tingtibi-Nanglam	Temporary	
4	6/11/2021	1:46	6/11/2021	2:38	0	-44.5700	66 Tingtibi-Jigmi	Tingtibi-Jig	Temporary fault	Distance Protection Relay: Start Phase-ABC,Trip phase ABC,Fault Location:8.19KM,Fault Zone-1,	132kV Tingtibi-Jigmeling	Temporary	
5	6/18/2021	17:35	6/18/2021	19:36	2	-34.1300	66 Tingtibi-Jigmi	Tingtibi-Jig	220/66 Main Bus R phase insulator fail	Distance Protection Relay: Start Phase-AN,Fault Location:-463.2M,Fault Zone-4	132kV Tingtibi-Jigmeling	Insulator Fail	
6	6/18/2021	17:35	6/18/2021	19:37	2	31.3200	66 Tingtibi-Nang	Tingtibi-Na	220/66 Main Bus R phase insulator fail	Distance Protection Relay:Trip phase AN,Fault Location:-509.3M,Fault Zone-4,	132kV Tingtibi-Nanglam	Insulator Fail	
5. 132/33kV Yurmoo Substation													
i) 66kV & Above													
	18.06.2021	0.711888889	18.06.2021	0.85347222	3	3.2	132kV Tingtil Yurmoo I Insulator puncture at Tingtibi Ss- N-E				Tingtibi Ss		Restored after complet
6. 220/33kV Dagapela Substation													
i) 66kV & Above													
1	15.06.2021	0.088889556	15.06.2021	0.097222222	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.

Division:	SMD-DEOTHANG
Substation:	132/33/11kV Nanglam Substation
Month:	Jul-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/ Tripping)	Shutdown/Tripping		Normalization Time		[illegible] (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, 5MVA Trf-I	132kV	Tripping	7/2/2021	00:19 hrs	7/2/2021	00:23 hrs	0	Non directional IDMT PROTN Relay operated	O/C relay-50A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to to fault on 33kV Tsebar feeder
2	132/33kV, 5MVA Trf-II	132kV	Tripping	7/2/2021	00:19 hrs	7/2/2021	00:24 hrs	0	Non directional IDMT PROTN 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, 5MVA Trf-I	132kV	Tripping	7/2/2021	00:45 hrs	7/2/2021	09:35 hrs	8	Non-directional IDMT PROTN 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, 5MVA Trf-II	132kV	Tripping	7/2/2021	00:45 hrs	7/2/2021	01:50 hrs	1	Non-directional IDMT PROTN 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, 5MVA Trf-I	132kV	Tripping	7/5/2021	09:39 hrs	7/5/2021	09:44 hrs	0	Non-directional IDMT PROTN 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, 5MVA Trf-II	132kV	Tripping	7/13/2021	14:22 hrs	7/13/2021	14:27 hrs	0	Non-directional IDMT PROTN 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, 5MVA Trf-II	132kV	Tripping	7/13/2021	15:14 hrs	7/13/2021	15:19 hrs	0	Non-directional IDMT PROTN 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/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Tripping Details: Protection Relay Oprd	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks
132kV													
1	Nganglam-Tingtibi	132kV	Tripping	07.07.2021	10:27	11.07.2021	12:34	97	Micom relay P442	Fault Value (Ia= 182.6A IB=88.96A, IC=411.2A IN=401.2A	Earth Fault (R-PH to Ground)		Test charged vide closing code# 1101 from both end but tripped on same fault. Fault was located towards TSW124-TSW125 where flashing of Disc insulator has caused
2	Nganglam-Tingtibi	132kV	Tripping	21.07.2021	12:00	21.07.2021	12:12	0	Micom relay P442	DEF trip, R Phase, Fault location 137.0km, Zone 1, Fault resistance 1.750 ohm, System frequency 50.0Hz, Fault duration 79.69ms IIA= 98.47A, IB= 355.6A IC= 865.6A, VAN 113.9kV, VBN= 51.44kV, VCN= 115.5kV	Over Current		Supply restored after coordination to BPSO and Tingtibi end with rule Switch ON code# 1122 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/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Tripping Details: Protection Relay Oprd	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks
1	132/33kV Trans	132kV	Tripping	7/8/2021	9:42	7/8/2021	9:50	0	BACKUP PROTN. RELAY REF615	86A OPTD	OC & EF	_	CB closed at 09:50 hrs from our end.
6	132/33kV Trans	132kV	Tripping	7/15/2021	8:32	7/15/2021	8:38		BACKUP PROTN. RELAY REF615	86A OPTD,Protection tripped	OC & EF	_	CB closed at 8:38hrs from our end.
9	132kV Rangia fe	132kV	Tripping	7/20/2021	12:38	7/20/2021	12:55		BCPU 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 PROTN. 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	7SJ8011-5EB90-1FC0/DD, SIPROTECT 7UT81			ICT tripped along with tripping of 220kV Dagapela Line.
2	2-Jul-21	01:34 hrs	2-Jul-21	07:40 hrs	6	6	-21.81	500MVA ICT	-21.81	67/67 TOC A Pickup, 67/67 TOC B Pickup, 50Ns - 1/2 trip	7SJ8011-5EB90-1FC0/DD, SIPROTECT 7UT81			ICT tripped along with tripping of 220kV Dagapela Line and ICT kept shutdown as per BPSO instruction.
4	19-Jul-21	12:49 hrs	19-Jul-21	13:46 hrs	0	57	-78.33	500MVA ICT	-78.33	67/67N EV	7SJ8011-5EB90-1FC0/DD, SIPROTECT 7UT81			
5	19-Jul-21	12:49 hrs	19-Jul-21	12:49 hrs	0	0	MJ1-290.15 & MJ3-290.88	MHPA Line 1 & 3	MJ1-290.15 & MJ3-290.88	MJ1: Rph pick up. Fault distance 7.7km. MJ3: Rph pick up and Z1 trip	SIPROTECT 7SA52, SIPROTECT 7SA611			Line auto reclosed at 1.29s.

220 kV														
1	2-Jul-21	00:14 hrs	2-Jul-21	00:22 hrs	00:14 hrs	0	0.81	220kV Deggopila 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=7.25kA, Ib=7.25kA & Ic=0.02kA	
2	2-Jul-21	00:41 hrs	2-Jul-21	00:57 hrs	00:41 hrs	0	0.81	220kV Deggopila 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 5.95km.		Fault Loop (L1 & L2), Ia=2.7kA, Ib=1.69kA & Ic=0.02kA	
3	2-Jul-21	01:10 hrs	2-Jul-21	01:20 hrs	01:10 hrs	0	0.87	220kV Deggopila 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 7.26km.		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 Deggopila 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 7.62km.		Fault Loop (L1 & L2), Ia=2.69kA, Ib=2.68kA & Ic=0.02kA	Line declared faulty
5	20-Jul-21	04:11 hrs	20-Jul-21	04:42 hrs	04:11 hrs	0	0.87	220kV Deggopila Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-1, YBBph pick up and Z1trip. Fault distance 7.4km. Main-2, YBBph pick up and Z1 trip. Fault distance 7.12km.		Fault Loop (L1 & L2), Ia=6.62kA, Ib=7.66kA & Ic=7.38kA	
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, BARph pick up and Z1trip. Fault distance 6.95km Main-2, BARph pick up and Z1 trip. Fault distance 6.28km.		Fault Loop (L1 & L2), Ia=3.88kA, Ib=6.38kA & Ic=4.26kA	Line charged as per BPSO code 1374 , Phub Zam
7	28-Jul-21	16:59 hrs	28-Jul-21	17:29 hrs	16:59 hrs	0	0.82	220kV Deggopila Feeder		Distance Relay: SIPROTECT 7SA52 & REL670	Main-1, Bph pick up and Z1trip. Fault distance 6.95km Main-2, BARph pick up and Z1 trip. Fault distance 6.12km.		Fault Current Ia=1.62kA, Ib=0.01kA & Ic=1.76kA	Line charged as per BPSO code 1375 , Phub Zam
5. 132/66/33/11kV Gelephu Substation														
i) 66kV and above														
1	22.07.2021	11.50hrs	22.07.2021	14.22hrs		32	30	kv Gelephu-Jigmeling	non	Emergency s/d by Salakati ss	No CB opperated at ess end	Jigmeling line	Temporary	No CB opperated at ess 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,NEBLDC=6178
3	31.07.2021	06.15hrs	31.07.2021	15.10hrs	9	23	18.4	kv Gelephu-Salakati	Non	Y-Ph conductor snaped from main bus at Salakati Substation.	General trip,Inst InZone LY-phase,Dist.61.2/km,Differencial relay,RY-ph, Fault current=R=520.4A,Y=1496.54A,B=242.65A,IN=934.97A.	Salakati line	Temporary	Charging code NLDC BTN=1398, NLDC IND=1625,NEBLDC=6491
6. 132/33/11kV Tashi Substation														
i) 66 kV and Above														
1	7/7/2021	10:37	7/11/2021	12:40	98	13	13.0100	132kV Tingtibi-Nanglam	132kV Tingtibi-Nanglam	Insulator failed	Distance Protection Relay Trip phase ABC,Start phase AN,Fault Location:35.98MI,Fault Zone:1,	132kV Tingtibi-Nanglam	Line fault	
2	7/11/2021	11:59	7/11/2021	12:13	0	14	18.4500	132kV Tingtibi-Nanglam	132kV Tingtibi-Nanglam	Temporary Fault	Distance Protection Relay Trip phase ABC,Start phase BC,Fault Location:5.805MI,Fault Zone:1,	132kV Tingtibi-Nanglam	Line fault	
7. 220/33kV Deggopila Substation														
i) 66kV & Above														
1	15.06.2021	0.184806	15.06.2021 0:097222		0	19	-0.84	220KV Deggopila-Jig	Deggopila Substation over voltage		86 A, 86B,Y>1	-	Transient Fault	Feeder tripped on over voltage

August 2021

Division:	SMD-DEOTHANG
Substation:	132/33/11kV Kanglung Substation
Month:	Aug-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	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 Opid	Fault Details (As recorded by relay)			
132kV Feeders														
1	132kvCoeluna	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 faulty

Division:	SMD-DEOTHANG
Substation:	132/33/11kV Deothang Substation
Month:	Aug-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	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 Opid	Fault Details (As recorded by relay)			
1	XMER 2	132/33KV	Trip	18.08.2022	11:28	18.08.2022	11:38	0	10		Nil			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/S 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/Tripping)	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 Opid	Fault Details (As recorded by relay)			
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 coodination 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 coodination 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 coodination 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 coodination 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 clearing and rectifying the seepage rain water from the CB box with vide Switch ON code# 1474 issued by Mlss. 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= 87.72kV			Supply restored after coordinating to BPSO and Tingtibi end with vide Switch ON code# 1523 Issued by Mlss. Pema Lhamo, BPSO.

Division:	SMD-DEOTHANG
Substation:	132/33kV Motanga Substation
Month:	Aug-21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown	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 Opid	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 PROTN. RELAY-REL650	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 DMC	132kV	Tripping	8/6/2021	15:40	8/6/2021	16:04		24	MAIN DISTANCE PROTN. RELAY-REL650	86A OPTD,Protection tripped	OV&UV OPTD. BAY&B TRIP	-	CB closed at 16:04hrs from our end.
3	33kV POP I	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 Dem	132kV	Tripping	8/12/2021	5:23	8/12/2021	5:46		23	MAIN DISTANCE PROTN. RELAY-REL650	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 PROTN. RELAY-REL650	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-6982
6	132kV DMC	132kV	Tripping	8/12/2021	5:23	8/12/2021	6:24	1	1	MAIN DISTANCE PROTN. RELAY-REL650	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 Phur	132kV	Tripping	8/12/2021	5:23	8/12/2021	6:27	1	4	MAIN DISTANCE PROTN. RELAY-REL650	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 Azios	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 prote 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 PROTN. RELAY-REL650	86A & 86B OPTD	OV/UV	-	Informed BPSO, as instructed to closed CB with code NLDC BHT-1515,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 PROTN. RELAY-REL650	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
i) 66kV														
1	500MVA 3C	400/220kV	Tripping	0:00	07:49 hrs	44420	07:55 hrs	8	-61.72	7SJ8031-5EB90-1FC0 DD, SIPROTECT 7UT81	No relay indication			
2	500MVA 3C	400/220kV	Tripping	24-Aug-21	20:58 hrs	44432	21:04 hrs	6	-23.34	7SJ8031-5EB90-1FC0 DD, SIPROTECT 7UT81	50Ns 1/2 tripped			
3	500MVA 3C	400/220kV	Tripping	0:00	22:45 hrs	44432	23:09 hrs	54		7SJ8031-5EB90-1FC0 DD, SIPROTECT 7UT81	50Ns 1/2 tripped			
4	500MVA 3C	400/220kV	Tripping	0:00	23:54 hrs	44432	12:07 hrs			7SJ8031-5EB90-1FC0 DD, SIPROTECT 7UT82	50Ns 1/2 tripped			
5	400kV Quad	400kV	Tripping	0:00	01:58 hrs	44434	01:58 hrs	0	308.9	SIPROTECT 7SA52, SIPROTECT 7SA611	Main-1; Rph to ground pick . Main-2; Rph to ground pick	Fault distance 155.9km		
1	220kV Tsirai	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	summer Ia: 0.36kA, Ib: 0.14kA & Ic: 4.21kA		
2	30 MVA 3C	220kV	Tripping	0:00	04:40 hrs	44420	04:48 hrs	8	-23.98	86.1/86.2 operated	LV SEF			

2.															
i) 66kV and above															
1	11.08.2021 01:39 hrs	11.08.2021 02:00 hrs		0	21	76.42	Jigmeling feeder	Dhajay SS	Main II Ia=15.4 86.1 A2, relay Main II			Tripped	bus coulper 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=15.4 86.1 A2, relay Main II			Tripped	bus coulper 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	3kv Gelephu-Salakati	25MVA(HV & LV)	bad weather	ial relay,B-ph,	Salakati line	Temporary	Charging code NLDC BTN=1442, NLDC IND=508,NERLDC=6932	

September 2021

Division:	SMD DEOTHANG
Substation:	132/33/11kV Kanglung Substation
Month:	AUG'21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details: Protection Relay Oped	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks
	132kV														
1	Corlong-Kanglung Incomer	132kV	Tripping	02.09.2021	5:58	02.09.2021	6:11	0	13	-18.792	relay P143IB16A0C05/40A operated,	IA=411.3, IB=40.34, IC=405.6	Earth fault	Tripped	Corlong-Kanglung incomer Breaker tripped indicating earth fault, test charge done at 6:03 but did not withstand, later again charged at 6:11.
2	Corlong-Kanglung Incomer	132kV	Tripping	10.09.2021	17:10	10.09.2021	17:12	0	2	-21.204	relay P143IB16A0C05/40A operated and P442(Distance Relay)	IA=458.6, IB=704.4, IC=697.3 and Fault Location = 35.68KM	Over current	Tripped	Corlong-Kanglung incomer Breaker tripped indicating Over current and test charge done and line withstand.
3	Phuntsholthang	132KV	Tripping	10.09.2021	17:10	10.09.2021	17:10	0	20	20.124	REF615	IA=1.154 x IN, IB=1.261 x IN, IC=1.236 x IN	Over current	Tripped	132kV Phuntsholthang line tripped on Over current and test charge done and line withstand.
4	Corlong-Kanglung Incomer	132kV	Tripping	10.09.2021	17:39	10.09.2021	17:41	0	2	-21.204	relay P143IB16A0C05/40A operated and P442(Distance Relay)	IA=774.1, IB=839, IC=788.9 and Fault Location = 16.15KM	Over current	Tripped	Corlong-Kanglung incomer Breaker tripped indicating Over current and test charge done and line withstand.
5	Phuntsholthang	132KV	Tripping	10.09.2021	17:39	11.09.2021	12:03	19	4	20.124	REF615	IA=1.508 x IN, IB=1.515 x IN, IC=1.644 x IN	Over current	Tripped	132kV Phuntsholthang line tripped on Over current and test charge done and line did not withstand. Line made faulty.Charged the feeder on dated 11.09.2021 Closing Code 1582 by Tshering Choden (BPSO Thimphu)
6	Phuntsholthang	132	Line Faulty	29.09.2021	14:05	29.09.2021	14:15	0	10	18.954	Dist. Prot.	NA	Dist.	Line Faulty	Tripped & indicates Distance Protection relay.
7	Phuntsholthang	132	Shutdown	29.09.2021	16:32	feeder still under shut down							Shutdown	Voltage checking at p/Thang ss	Opening code:0141, issued by BPSO: Tshering Choden, Duty personal
8	Corlong-Kanglung Incomer	132	Line Faulty	29.09.2021	17:27	29.09.2021	18:08	0	39	-1.512	E/F	IA-109.6A,IB-753.8A,IC-96.81A.	Earth fault	Line Faulty	Tripped dearth fault relay.

Division:	SMD DEOTHANG
Substation:	132/33/11kV Nanglam Substation
Month:	AUG'21

Sl. No.	Name of Feeder	Voltage Level	Type of Outage	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details: Protection Relay Oped	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks
11kV Feeders															
1	132/11kV, 5MVA Tr#-II	11kV	Tripping	9/1/2021	10:51 hrs	9/1/2021	10:57 hrs	0	6	0.39	Trip relay operated	Tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 11kV Turbar feeder.
1	Nanglam-Dorjibang line	11kV	Tripping	9/28/2021	02:18 hrs	9/28/2021	02:34 hrs	0	16	64.7	MICOM P442	Directional +O/C & E/F Relay: Tripped O/C Start t/f N, O/C start I> 1, E/F1 start IN1>12, trip IN1>2.5AB=115.4kV, VBC=127.6kV,31CA=102.1kV,VAN=77.16kV,VBN =78.82kV,VCN=57.26kV,IA=185.7A,IB=198.2A,I C=750.7A, 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:	AUG'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 Opnd	Fault Details (As recorded by relay)			
1	132/33kV 5MVA Transformer I&II	132/33kV	Tripped	02.09.2021	5:17	02.09.2021	5:20	0	3	0.67 & 0.85	NA	Nil	NA		Both the Transformer got tripped due to fault at samdrupjongkhar line. Test cargo/relay done and get stand.
2	132/33kV 5MVA Transformer I&II	132/33kV	Tripped	03.09.2021	9:19	03.09.2021		0		0.68 & 0.677	NA	Nil	NA	NA	Both the Transformer got tripped due to over current& earth fault of Bongtar line. Test charge was done and get stand.Bt found ok
3	132/33kV 5MVA Transformer I&II	132/33kV	Tripped	03.09.2021	18:34	03.09.2021	18.39	0	5	86 and 85	Bt opt.	NA	By Bongtar Sb	NA	Transformer was charged with isolating bongtar line and found normal. Burnt the closing coil of Tr.2 LV side we kept bills charge
4	Nanglor-Deothang line	11kV	Tripped	28.09.2021	2.26	28.09.2021	2.31	0	11	-50.22	NA	Nil	NA	NA	Supply tripped at both end (Nanglor and Motanga). No breaker operated at Deothang end . At 2.31 hrs supply charged from Motanga and at 2.34 hrs supply synchronized from Nanglor substation

Division:	SMD DEOTHANG
Substation:	132/33/11kV Nganglam Substation
Month:	AUG'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 Opnd	Fault Details (As recorded by relay)			
11kV															
1	Nganglam-Tingthi	11kV	Tripping	01.09.2021	14.55	01.09.2021	15.10	0	44	-10.11	Micom relay(P442	NA	Transient Fault		CB operated at Tingthi end only
2	Nganglam-Tingthi	11kV	Tripping	09.09.2021	11.31	09.09.2021	11.42	0	9	10.7	Micom relay(P443	IA= 347.8A IB= 151.6A IC= 164.8A IN= 500.4A VAN= 113.3kV VBN= 110.4kV VCN= 128.4kV A/R lockout Hlogenated	Earth Fault/Transient Fault		Supply restored after coordination to BPSO and Tingthi end with vide Switch ON code# 1570, Issued by Madam Karma Choden, BPSO
3	5MVA Transformer	11kV	Tripping	14.09.2021	14.51	14.09.2021	14.55	0	2	0.828	O/C & E/F Micom Relay	NA	Tripped cause due to 11kV Pasbang feeder where feeder CB fail to operate		Charged after Isolating 11kV Pasbang Feeder
4	5MVA Transformer	11kV	Tripping	22.09.2021	02.14	22.09.2021	02.18	0	4	0.674	59G operated	Earth Fault	Earth Fault		Tripped due to 11kV Pasbang feeder fault
5	5MVA Transformer	11kV	Tripping	27.09.2021	12.17	27.09.2021	12.18	0	1	0.854	O/C & E/F Micom Relay	NA	Tripped cause due to 11kV Pasbang feeder where feeder tripping coil has burnt out.		Charged after Isolating 11kV Pasbang Feeder

Division:	SMD BHUTRANG
Substation:	132/33kV Motanga Substation
Month:	(BLF)

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 Oprd	Fault Details (As recorded by relay)			
1	132kV Deothang Feede	132kV	Tripping	9/2/2021	5:58	9/2/2021	6:07		9	-17.9	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V&UV OPTD	--	Informed BPSO, as instructed to closed CB at 06:07 hrs from our end.
2	132kV Phuentsholing-I	132kV	Tripping	9/2/2021	5:58	9/2/2021	6:13		15	-18.6	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V&UV OPTD	--	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	18.38	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V&UV OPTD	--	Informed BPSO, as instructed to closed CB with code NLDC BHT-1547,NLDC India-84 and NERLDC-7737 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	89.37	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD	--	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 Feede	132kV	Tripping	9/7/2021	5:20	9/7/2021	5:26		6	-11.77	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD	--	Informed BPSO,as instructed to closed CB with code no. NLDC 86e-1563 charged at 5:26hrs from our end.
6	132kV DME feeder	132kV	Tripping	9/7/2021	5:20	9/7/2021	5:38		18	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD	--	Informed BPSO,as instructed to closed CB with code no. NLDC 86e-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	24.71	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD	--	Informed BPSO, as instructed to closed CB with code NLDC BHT-1565,NLDC India-259 and NERLDC-6010 charged at 5:55hrs from our end.
8	132kV Deothang Feede	132kV	Tripping	9/16/2021	3:58	9/16/2021	4:08		10	-10.12	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD	--	Informed BPSO, as instructed to closed CB at 4:08hrs from our end.
9	132kV DME feeder	132kV	Tripping	9/16/2021	3:58	9/16/2021	4:11		13	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OV & UV OPTD,R,Y,B phase OPTD	--	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 PROTN RELAY-RET650	86A OPTD	OC & EF	--	CB closed at 8:39hrs from our end.
11	15MVA Transformer	132/33kV	Tripping	9/21/2021	16:07	9/21/2021	16:17		10	0.12	DIFFERENTIAL PROTN RELAY-RET650	86A OPTD	EF	--	CB closed at 16:17hrs from our end.
12	15MVA Transformer	132/33kV	Tripping	9/22/2021	5:58	9/22/2021	5:59		1	0.07	DIFFERENTIAL PROTN RELAY-RET650	86A OPTD,SEF PROTN OPTD	OC & EF	--	CB closed at 5:59hrs from our end.
13	15MVA Transformer	132/33kV	Tripping	9/22/2021	14:52	9/22/2021	14:54		2	0.08	DIFFERENTIAL PROTN RELAY-RET650	86A OPTD,SEF PROTN OPTD	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 PROTN RELAY-RET650	86A OPTD,SEF PROTN OPTD	OC & EF	--	CB closed at 1:09hrs from our end.
15	132kV Deothang Feede	132kV	Tripping	9/24/2021	5:57	9/24/2021	6:07		10	-49.23	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO,as instructed to closed CB with code no. NLDC BHT-1617 at 6:07 hrs. line extend from our end.
16	132kV DME feeder	132kV	Tripping	9/24/2021	5:57	9/24/2021	6:07		10	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD,R,Y,B Trip.	0V/UV Trip	--	Informed BPSO,as instructed to closed CB with code no. NLDC BHT-1618 at 6:07 hrs. line extend from our end.
17	132kV Deothang Feede	132kV	Tripping	9/28/2021	2:10	9/28/2021	2:29		11	-43.81	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	OC & EF	--	Informed BPSO, as instructed to closed CB at 2:29hrs from our end.
18	132kV Rangia feeder	132kV	Tripping	9/28/2021	2:10	9/28/2021	3:12		58	33.08	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	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 Feede	132kV	Tripping	9/28/2021	2:56	9/28/2021	3:08		12	-43.01	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO, as instructed to closed CB at 3:08hrs from our end.
20	132kV DME feeder	132kV	Tripping	9/28/2021	2:56	9/28/2021	3:10		14	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD,R,Y,B Trip.	0V/UV Trip	--	Informed BPSO, as instructed to closed CB at 3:10hrs from our end.
21	132kV DME feeder	132kV	Tripping	9/28/2021	9:08	9/28/2021	11:14	0	6	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD,R,Y,B Trip.	0V/UV Trip	--	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1651 at 11:14hrs line extend from our end.
22	132kV Deothang Feede	132kV	Tripping	9/28/2021	5:12	9/28/2021	6:40	1	28	-38.87	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/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 Phuentsholing-I	132kV	Tripping	9/29/2021	13:05	9/29/2021	14:11		6	-19.8	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	Zone-1 OPTD,R and Y phase Trip.	--	Informed BPSO,as instructed to closed CB and CB closed at 14:11hrs from our end.
24	132kV Deothang Feede	132kV	Tripping	9/29/2021	14:15	9/29/2021	14:21		6	-47.73	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO,as instructed to closed CB and CB closed at 14:21hrs from our end.
25	132kV Deothang Feede	132kV	Tripping	9/29/2021	14:23	9/29/2021	14:43		20	-47.73	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO,as instructed to closed CB and CB closed at 14:43hrs from our end.
26	132kV Phuentsholing-I	132kV	Tripping	9/29/2021	14:15	9/29/2021	14:47		32	-19.04	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/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	31.21	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1661,NLDC India-1756,NERLDC-9083 at 14:55hrs line charge from our end.
28	132kV Deothang Feede	132kV	Tripping	9/29/2021	17:57	9/29/2021	18:01		4	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO,as instructed to closed CB and CB closed at 18:01hrs from our end.
29	132kV Phuentsholing-I	132kV	Tripping	9/29/2021	17:57	9/29/2021	18:04		7	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/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	18:29		28	0	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1665,NLDC India-1767,NERLDC-9109 at 18:29hrs line charge from our end.
31	132kV Deothang Feede	132kV	Tripping	9/30/2021	10:58	9/30/2021	11:01		3	54.44	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/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	62.73	MAIN DISTANCE PROTN RELAY-REL650	86A & 86B OPTD	0V/UV Trip	--	Informed BPSO, as instructed to closed CB with code no.NLDC BHT-1667,NLDC India-1810,NERLDC-9311 at 11:27hrs line charge from our end.

Division:	SMD BEOTHANG
Substation:	132/33kV Corbang Substation
Month:	OKT

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 Oprd	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-Corbang Line was triped 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 Triped at 17.35 hrs when Khilikhar-Corbang Line was charged from Khilikhar end.

Division:	SMD BEOTHANG
Substation:	33/11kV Phuentsholing Substation
Month:	OKT

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 Oprd	Fault Details (As recorded by relay)			
1	Phuentsholing-Motanga	11kV	ransient Fau	9/2/2021	5:58	9/2/2021	6:15		17	16.62	REL650 Zone1	(DEF)PDEF1) Trip value: L1: 489.77A, L2: 91.87A, L3: 513.09A, Le: 597.68A	Earth fault	Not available	11kV incomer feeder trip at both end ,test charged from Kanglung end and did not withstand. Charged from Motanga end and Normalized
2	Kanglung	11kV	ransient Fau	9/10/2021	17:31	9/10/2021	17:51		32	20.15	ONE 1 OPTD AND R,Y,B TRI	ZONE1 OPTD AND R ,Y,B Phase trip and fault distance 21.212KM,Fault value:I1:1477.81A,I2:1808.30A,I3:1711.80A,I0:1 8.58	R,Y and B phase trip.	Not available	Test charged and line with stand.
3	Kanglung	11kV	rip on Fau	9/10/2021	17:40	9/11/2021	12:03	19	3	20.15	ONE 1 OPTD AND R,Y,B TRI	ZONE1 OPTD AND R ,Y,B Phase trip and fault distance:17.358KM,Fault value:I1:1212.59A,I2:1337.37A,I3:1215.54A,IO:1 1.49	R,Y and B phase trip.	Not available	Triped again after 7 minutes of test charging and RPSO has instructed for line patrolling.line charged after TND cleared the fault with the switch ON code 1582 issued by new T-during Checker(RPSO).
4	Kanglung (1R,7LA)	11kV	Trip on fault	9/29/2021	16:06					19.76	ZONE 1 OPTD, BAR phase trip,FF/BRC and OV1/UV Trip	Trip value; L1: 1962.68A, L2: 1621.80A, L3: 10.63A, Le: 347.49A.	Over current	Not available	Test charge but could not withstand line at Kanglung end due ZONE1 OPTD , BAR Phase trip,FF/BRC and relay indicating OV1/UN). Fault Distance: 10.07 km. Line under shutdown for fault finding by TL/MU Deothang
5	Motanga (1R,1LA)	11kV	Trip	9/30/2021	10:59	9/30/2021	11:01		2	0.74	Nil	Nil	Nil	Not available	Trip at Kanguny and Deothang, Both end CB are normal

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
i) 66kV Above													
1	2-Sep-21	04:00 hrs	2-Sep-21	04:18 hrs	0	-385.42	400kV M3	400kV	Tripping	SIPROTECT 7SA52 & SIPROTECT 7SA611	R,YB Pickup, Ground Pickup, Zone 1 optd.	Line-Ground fault	
2	5-Sep-21	07:00 hrs	5-Sep-21	07:04 hrs	0	-58.06	500MVA ICT	400/220kV	Tripping	7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT61	No relay indication		
3	5-Sep-21	07:06 hrs	5-Sep-21	12:22 hrs	5	-58.06	500MVA ICT	400/220kV	Tripping	7SJ8031-5EB90-1FC0/DD, SIPROTECT 7UT62	50Ns 1/2 tripped		
4	16-Sep-21	16:13 hrs	16-Sep-21	16:23 hrs	0	-385.42	400kV M3	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	Yph to Ground, Z1 ±1B Trip. Fau	Line-Ground fault	Western Grid fail
6	13-Sep-21	14:19hrs	13-Sep-21	14:23hrs	0	-61.25	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	-66.71	220kV Tsirang feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL671	Main 1: Yph trip, Z1 ±1B trip. Fault dist. 17.5km Main 2: Yph trip, Z1 trip, Fault dist. 20.25km.	Line-Ground fault	harged as per BPSO instructio
9	17-Sep-21	16:14hrs	17-Sep-21	16:40hrs	0	1.01	220kV Dagapela feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1: RYYph trip, Z1 ±1B trip. Fault dist; 20.8km Main 2: Yph trip, Z1 trip, Fault dist; 18.2km	Line-Ground fault	harged and charged as per BP
10	28-Sep-21	13:37hrs	28-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 Ir=0.45kA, 3y3.25kA, Ib=2.82kA	Line-Ground fault	Closed tripped on same fault
11	28-Sep-21	13:37hrs	28-Sep-21	14:20hrs	0	1.87	220kV Dagapela feeder	220kV	Tripping	Distance Relay: SIPROTECT 7SA52 & REL670	Main 1 optd ,Fault Loop(L2-L3and ground),Fault dist(25.4km) Fault current Ir=0.02ka Ib=3.09ka Ic=3.22ka	Line-Ground fault	
12	28-Sep-21	13:51hrs	28-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 Ir=0.45kA, 3y3.25kA, Ib=2.82kA	Line-Ground fault	Closed tripped on same fault
13	28-Sep-21	14:04hrs	28-Sep-21	14:26Hrs	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 Ir=0.45kA, 3y3.25kA, 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	13:51hrs	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, Ia	86.1 &2, Distance relay	Main II	Tripped	since the line couldn't restor
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 Ranichu feeder was k
6	29.09.2021	14:03hrs	29.09.2021	14:08hrs	0	0	ICT-I	Dhajay SS	Diff A=1.83/In0, Rc	86.1 &2, 87 relay		Tripped	Since Ranichu feeder was k
7	29.09.2021	14:03hrs	29.09.2021	14:21hrs	0	2.9	Dagachu	Dhajay SS	Main 2, Ia	86.1 &2, Distance relay	Main II	Tripped	Since Ranichu feeder was k

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 1,Dist.6.03km,Fault current;R-98.97A,Y-2736.19A,B-2618.54A,N-19.05A			Charging code= NLDC RTN=1600,NLDC IND=767,NERLDC=8357

4. 132/33/11kV Tingbi Substation

i) 66 kV and Above

1	9/1/2021	14:58	9/1/2021	15:38	0	18.7200	132kV Tingbi-Nangla	132kV Tingbi-Nangla	Temporary Fault	Distance Protection Relay:Trip phase ABC,Start phase AN,Fault Loaction:30.82kM,Fault Zone-1.	132kV Tingbi-Nanglam		Temporary	
2	9/9/2021	10:33	9/9/2021	10:42	0	31.6100	132kV Tingbi-Nangla	132kV Tingbi-Nangla	Temporary Fault	Distance Protection Relay:Trip phase ABC,Start phase AN,Fault Loaction:XY 17.6kM,Fault Zone-1.	132kV Tingbi-Nanglam		Temporary	
3.00	44466.00	0.62	44466.00	0.62	0.00	14.49	132kV Tingbi-Jigmeling	132kV Tingbi-Jigmeling	Temporary Fault	Distance Protection Relay:Trip phase ABC,Fault Loaction: 19.12KM,Fault Zone-1.	132kV Tingbi-Jigmeling		Temporary	

October 2021

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

Division:	SMD DEOTHANG
Substation:	[illegible] Kilikhar 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 Oped	Fault Details (As recorded by relay)			
132kV Feeders															
1	Kurichu	132kV	Tripped	[illegible]	[illegible] hrs		07:[illegible] hrs		[illegible]	21.[illegible]		Nil	Nil	Grid fail	Grid failed from Tingtibi end.

Division:	SMD DEOTHANG
Substation:	[illegible] 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 Oped	Fault Details (As recorded by relay)			
	132kV														
1	[illegible]	132	Shutdown	29.09.2021	10:12	01.10.2021	10:45	48	33	0.072	NA	NA	Shutdown	Change of jumpering at location [illegible]	[illegible]
2	Corlung	132	Grid failed	02.10.2021	6:42	02.10.2021	7:34	0.52	52	[illegible]	NA	NA	Whole Eastern Power Grid failed	NA	Source Failed
3	5MVA Transformer - II	132	Tripped	17.10.2021	10:21	17.10.2021	14:08	3	47	0.445	NA	NA	HP OLTC [illegible] tripped	NA	Tripped on OLTC Buchols pressure low
4	5MVA Transformer - II	132	Tripped	19.10.2021	21:37	20.10.2021	11:37	14	20	0.069	NA	NA	HP OLTC Buchols tripped	PRV limit switch short circuit	Tripped on OLTC Buchols pressure low

Division:	SMD DEOTHANG
Substation:	[illegible] Tangsibji 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 Oped	Fault Details (As recorded by relay)			
132kV Feeders															
1	Tangsibji-Nganglam	132kV	Tripping	10/2/2021	06:38 hrs	10/2/2021	07:33 hrs	0	55	2.09	MiCOM P442	[illegible]	Tripped on fault	-	[illegible]
2	5MVA Transformer-I, 132/33/11 kV	132kV	Tripping	10/3/2021	01:38 hrs	10/3/2021	01:42 hrs	0	4	0.46	Non directional PROTN Relay operated	O/C relay-95A & tripping relay 86 operated	Tripped on feeder fault	-	Tripped while test charging 33kV Wamrong feeder.
3	Tangsibji-Deothang	132kV	Tripping	########	05:23 hrs	########	05:42 hrs	0	19	47.4	MiCOM P442	[illegible]	Tripped on fault	-	Informed to BPSO, Thimphu and Charged the feeder with closing code 1711 from their end
4	5MVA Transformer-I, 132/33/11 kV	132kV	Tripping	########	08:45 hrs	17.10.2021	08:50 hrs	0	8	0.51	Non directional PROTN Relay operated	O/C relay-95A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Nganglam feeder
5	5MVA Transformer-II, 132/33/11 kV	132kV	Tripping	########	08:45 hrs	########	08:48 hrs	0	3	0.34	Non directional PROTN Relay operated	O/C relay-95A & tripping relay 86 operated	Tripped due to feeder fault	-	Tripped due to fault on 33kV Nganglam feeder
6	5MVA Transformer-I, 132/33/11 kV	132kV	Shut down	########	13:10 hrs	########	16:44 hrs	3	34	0.42	-	-	-	To Install CT for 2.5MVA TFR-I	Shut down taken by SMD Group Deothang
7	5MVA Transformer-II, 132/33/11 kV	132kV	Shut down	########	13:10 hrs	########	16:56 hrs	3	46	0.25	-	-	-	To Install CT for 2.5MVA TFR-I	Shut down taken by SMD Group Deothang

Division:	SMD DEOTHANG
Substation:	132/33/11kV Nganglam Substation
Month:	Nov 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	[illegible]	132kV	Tripping	02.10.2021	06:37	02.10.2021	06:43	0	6	12.86	Micom relay P443	[illegible]	Earth Fault/Transient Fault		[illegible]
2	[illegible] Transformer	132kV	Tripping	09.10.2021	15:20	09.10.2021	15:21	0	1	0.698	E/F & O/C Micom relay	NA	Tripped due to 33kV Panbang feeder earth fault		
2. 400/220/132/33kV [illegible] Substation															
Sl. No.	Date of Tripping	Time of Outage/ Time of Tripping	Date of Normalisation	Time of Fault was Cleared	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Name of feeder	Name of the Substation/Bays Affected by the Fault	Reasons of Fault	Relay Operation	Fault Location(KM)	Type of outages	Remarks	
[illegible]															
1	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
3. 132/33/11kV [illegible] Substation															
[illegible]															
1	[illegible]	[illegible]	[illegible]	[illegible]	0	7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
1	[illegible]	[illegible]	[illegible]	[illegible]	0	4	0	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
2	[illegible]	[illegible]	[illegible]	[illegible]	0	6	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
3	[illegible]	[illegible]	[illegible]	[illegible]	0	3	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
4	[illegible]	[illegible]	[illegible]	[illegible]	0	4	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
6	[illegible]	[illegible]	[illegible]	[illegible]	0	4	[illegible]	Transformer 2 & [illegible] 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
7	[illegible]	[illegible]	[illegible]	[illegible]	0	6	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
8	[illegible]	[illegible]	[illegible]	[illegible]	0	4	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
9	[illegible]	[illegible]	[illegible]	[illegible]	0	3	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
10	[illegible]	[illegible]	[illegible]	[illegible]	0	5	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	
11	[illegible]	[illegible]	[illegible]	[illegible]	0	3	[illegible]	Transformer 2	[illegible] & all outgoing Feeders	Trip	[illegible]	NA		[illegible]	

November 2021

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

Division:	SMD DEOTHANG
Substation:	132/33/11kV Kilikhar 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 Shutdow	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.

Division:	SMD BEOTHANG
Substation:	132/33kV Motanga Substation
Month:	######

Sl. No.	Name of Feeder	Voltage Level	Type of Outage (Shutdown/Tripping)	Shutdown/Tripping Date	Shutdown/Tripping Time	Normalization Time Date	Normalization Time Time	Duration of Outage (Hrs)	Duration of Outage (Min)	MW before Outage (MW)	Tripping Details: Protection Relay Oppd	Tripping Details: Fault Details (As recorded by relay)	Type/Cause of Fault	Reason for Shutdown	Remarks
1	132kV Rangia Feeder	132kV	Tripping	11/5/2021	20:25	11/5/2021	20:49		24	16.9	OC & EF	E:I=0.784,E,I=0.180,E,I=0.1 69	Tripped on fault	-	Informed BPSO, as instructed to closed CB with code no.NLDC Ilbn-1792,NLDC India-120,NEBL/DC=277 CB closed at 20:49hrs from our end.
3	15MVA Transformer	132/33kV	Tripping	########	8:00	########	8:21		21	1.85	OC & EF,86A & 86B OPTD,MEF OPTD	Nil	Tripped on fault	-	CB closed at 10:21hrs from our end.
6	DSE 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 Cb 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's Hours Affected	Remarks
2. 220/66/33kV Dhajay Substation																	
i) 66kV and above																	
1	26.11.2021	20:17hrs	26.11.2021	20:48hrs		11	13.88	2.5166666667	Agnaling 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	20:17hrs	26.11.2021	20:49hrs		12	67.12	9.624	Dagadin Feeder	Dhajay Substation	over current	21.2 distance relay main-2, Ia=1	Line supply	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	0.516898	04.11.2021	0.549306	0	19	2.8	2.8	220/33kV Transform	Dagapela		86A	-	transient	whole Dagana	0.01119	tripped while tripping recover at 33kV side
2	04.11.2021	0.516898	04.11.2021	0.549306	0	19	2.8	2.8	220/33kV Transform	Dagapela		86A	-	transient	whole Dagana	0.01119	tripped while tripping recover at 33kV side
3	10.11.2021	0.117361	10.11.2021	0.349306	5	19	7.74	7.74	220/33kV Transform	Dagapela		86A	Relay set	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	19	7.74	7.74	220/33kV Transform	Dagapela		86A	Relay set	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

Annexure- II

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 Buchlize at 1:35 Hrs and issued shutdown to maintenance team, SMG vide PTW No. MSS/01/2021 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 Buchlize 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 Singhigaon Substation												
no tripping												
(D)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	21.01.2021	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-Goutu feeder was taken shutdown by TMD,Pling for replacement of polymers insulator and RoW clearing.
4	25.01.2021	8:36					66kV Pling-Goutu feeder	66kV Pling-Goutu feeder		Nil	Line	At 08:36hrs 66kV Pling-Goutu 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	0.07	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	0.07	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	0.07	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	0.07	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.

(I) 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 Chumdo switching station											
1	18.01.2021	0955hrs	18.01.2021	1010hrs	15min	(-)10.2MW	66kV Chukha feb	Fed from 66kV Jemina FC	transient fault	CB open, O/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	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 Incomner	Fdr. I and II	Relay L23 got tripped at chukha end	Relay L23 got tripped at chukha end	66KV Incomner	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 opening 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	1/11/2021	4:13	1/11/2021	4:15	2	8.4	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	TRAFO DIFFL PROTN. 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 PROTN.RELAY 67. Trip Relay 86.	RICB Thimphu	The Transformer was tripped due to flash over of 11kV Incomer Cable at RICB Thimphu as confirmed by the ESD Personal .Test charged the Transformer & hold normal
2	1/11/2021	4:34	1/11/2021	4:35	1	8.4	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	TRAFO DIFFL PROTN. 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 PROTN.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 RICB Thimphu. Test charged the Transformer & hold normal
3	1/11/2021	4:50	1/11/2021	4:52	2	8.4	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	TRAFO DIFFL PROTN. 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 PROTN.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 RICB 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 PROTN RELAY-21.Indication 1,2,&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 PROTN RELAY-21.Indication 1,2,&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 PROTN RELAY-21.Indication 1,2,&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 Phuentsholing 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- 6.90, fault angle- 54 deg, fault current-0.359Amp, location-5.930M, 34.5% & 86 relay	Line	At 14:48hrs 66kV Chukha-Pling feeder got tripped on both the end. At 14.53hrs normalised the feeder.
(J) 66/33/11 kV Gedu Substation												
1	06.02.2021	14:48	06.02.2021	14:53	0	2.34	66kV Chukha-Phuentsholing 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 B-B phase 2. Tripping relay 86	Line segment	Test charged and hold normal.
3	10.02.2021	12:31	10.02.2021	12:33	0	0.41	8MVA 66/33kV Tx.	33kV Gurungdara feeder-I	Differential fault on Transformer	1. Differential relay B-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 Ifdr of Gurungdara substation. The Mirching Ifdr 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	Phuentsholing 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 Bus coupler	N/A	N/A	CB SF6 6/LCB TC Trouble, CB faulty	Dumdum yard, Breaker of 220kV buscoupler.	Due to chattering sound on the breaker of 220kV buscoupler, we have avail shutdown from the BPSO on the request of our substation head.The shutdown code No. 016/I is issued by Mrs. Phub Zam.The feeder was charged at 19.50hrs against charging code 1329
(B) 66/33kV Wanka Substation												
1	14.2.2021	08:00hrs	14.2.2021	10:10hrs	2hr	.272MW	Feeder I Wanakha	Feeder I Wanakha	O/C, OCH on ABC phase	O/C, OCH on ABC phase operated	Tree falles on 33K> line at wanakha as per ESD wanakha	
(G) 66/33/11kV Deothenchelling substation												
1	2/9/2021	14:22hrs	2/11/2021	14:27hrs	71 Hrs	0.293	66KV Gass fdr.	Nil	Tripped due to over current	O/C, B & C phase 1A-42.70A, IB-2.948KA & IC-2.577KA, 86A & 86B	not known	Fdr tripped due to falling of huge trees on the Y & B phase, and damage both the conductor. TSED Gelephu unc 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 220KTL Relay; G1 Phase A [FWD] 220KTL=851< IA =3009A, Phase B <FWD> IB= 98.19A, 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 Singhigaon Substation												
1	13.03.2021	16:50	13.03.2021	17:00	0	3	220kV Singhigaon -Samtse Feeder.	Singhigaon GIS & Samtse Feeder	Tripped due to Overcurrent and Earthfault	Distance protection operated and 86 operated.		IL1=2803A, IL2=75.79A, IL3=2765A, IE=2942A
(B)66/33/11 kV Phuentsholing Substation												
1	05.03.2021	10:27	05.03.2021	10:33	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 10.27hrs 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	10:26	05.03.2021	10:33	0	3.19	66kV Chukha-Phuentsholing ckt	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	Phuentsholing 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 Singhigaon	N/A	Over current	REL 670 MAIN 1:- General trip,Zone 1, Rand Bphase fault.	N/A	Trip values. IL1- Fault mag- 207.58A, Fault angle--88.76deg. IL2- Fault mag-91.40A, Fault angle- -12.00deg. IL3 Fault mag- 347.06A, Fault angle- -.64deg.
(B) 66/33kV Wara Substation												
1	7/3/2021	10:10hrs	7/3/2021	10:13hrs	0	460MW	66kV Incomaer	Fdr 1 and II	Chukha Hr. Grd tripped at chukha	66kv fail from chukha end as chukha Hr. Grd tripped at chukha end		
(C) 66/33kV Olakha Substation												
1	3/7/2021	8:40	3/7/2021	8:42	0	-24.6	66kV Semtokha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optrd. 4.Zone2 Optrd. 12.LBB Optd.Trip relay-66		66kV Semtokha-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 Semtokha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optrd. 4.Zone2 Optrd. 12.LBB Optd.Trip relay-66		66kV Semtokha-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 Semtokha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTN RELAY-21.Indication 1,2,3&12. 1.General trip. 2.Distance Optrd. 3.Zone1 Optrd. 12.LBB Optd.Trip relay-65		66kV Semtokha-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 Semtokha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTN RELAY-21.Indication 1,2,4&12. 1.General trip. 2.Distance Optrd. 4.Zone2 Optrd. 12.LBB Optd.Trip relay-66		66kV Semtokha-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 Semtokha-Olakha line	Olakha substation	Line Fault	DISTANCE PROTN RELAY-21.Indication 1,2,3&12. 1.General trip. 2.Distance Optrd. 4.Zone2 Optrd. 12.LBB Optd.Trip relay-67		66kV Semtokha-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	21:23	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-SESM	NA	NA	NA		66kV LSA -SESM 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 Dechenla Supply no interruption feeded from Basochu
	(E) 66/33/11 kV Paro Substation											
1	3/7/2021	10:16	3/7/2021	10:17	0	9.28	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: 1101
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: 1104
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: 1105 from BPSO, the Changedaphu line was charged, but the line couldn't 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	09:58hrs				-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	8:14hrs	3/7/2021	8:45hrs	0.00	5.230	66kV Jemina to Changidaphu	Changidaphu	Covering of Insulator by Snow/Ice	Distance Protection		
2	3/7/2021	11:04hrs	3/18/2021	10:01hrs	283.00	5.230	66kV Jemina to Changidaphu	Changidaphu	Covering of Insulator by Snow/Ice	Distance Protection		
3	3/7/2021	8:54hrs	3/7/2021	11:05hrs	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	13:00	0	27	400kV Siliguri Feeder 220kV Bus coupler	Siliguri Substation	Transient fault	Main I & 86A R-optd.			IL1=376.9A<-100.1deg, IL2=256A<47.17deg, IL3=161A<90.29deg,IL4= 424.2A< 87.05deg (Note: weather conditions were light rainfall with lightening).
2	22.04.2021	12:40	22.04.2021	12:40	0	0		Malbase Substation	Transient fault	86 trip, 86 optd.			Earthfault. (Note: weather conditions were light rainfall with lightening).
(B) 220/66/11 kV Singhigaon Substation													
1	22.04.2021	12:40	22.04.2021	12:47	0	5.1	66kV Bhutan Concast Ltd.	Singhigaon GIS	Tripped due to Overcurrent	Directional overcurrent trip, Ifgt Trip, 86 optd.			IL1=0.11kA, IL2=0.02kA, IL3=0.08kA,
2	22.04.2021	12:40	22.04.2021	12:48	0	0	66kV Main Bus I	Singhigaon GIS	Tripped due to Overcurrent	O/C Trip, General Trip, 86 optd.			IL1=0.22kA, IL2=0.24kA, IL3=0.04kA,
(E) 66/33/11 kV Phuentsholing 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 1969 from BPSO (for supply reliability at Pling Sc), since 66kV Chukha-Gedu section was taken shutdown by TMD,Tshimakabla for carrying out annual maintenance on 66kV chukha-Gedu section (i.e replacement of insulator with glass and polymer). On dated 16.04.2021 at 17:56hrs opened CB of 66kV Pling-Malbase feeder with opening code 0913 from BPSO and again the feeder was kept under idle condition.
2	22.04.2021	3:07	22.04.2021	3:16	9	9.00	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder	Tripped	DISTN OPTD, 186&86	Line		At 03:07hrs 66kV Pling-Gomtu feeder got tripped at out end and 66kV Chukha-Pling feeder got tripped at Chukha end causing black out at Phuentsholing. Weather condition was raining with lightning during the time of tripping. At 03:16hrs charged 66kV Malbase-Pling feeder after informing BPSO. At 03:16hrs normalized 66kV Pling-Gomtu feeder after getting clearance from BPSO. At 03:35hrs opened CB of 66kV Pling-Malbase feeder with opening code 0933 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 Damdum & Gomtu-Phuentsholing	Gomtu Substation	Transient fault	General trip Zone-4 trip/R ph. Fault	Line segment	Transient Fault	66 kV Phuentsholing supply restored at 3.16 hrs. 66kV Damdum feeder charged after informing to BPSO and Dhamdum Substation.
(F) 220/66/33 kV Dhamdum Substation													
1	22.04.2021	3:07	22.04.2021	3:33	11	7.7	66 kV Gomtu Ckt	N/A	Tripped	N/A		N/A	66kV Gomtu ckt tripped on R phase fault at 3.07MW.

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 Chumdo switching station												
	(B) 66/33kV Watsa 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 Deothenkholing line	Distance protection relay 21 operated. Indication 1(general trip)	66kV Gasa line from Deothenkholing	Transient Fault	The Supply was fail from Semtokha due to fault at 66kV Deothenkholing to Gasa Line as information received from BPSO and shift duty of Semtokha 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	4/22/2021	1:40	4/22/2021	1:42	0	1.1	20MVA Transformer I	Only 33KV Chabacho feeder IV was effected as the other feeders was fed from Transformer II	Due to tripping of 33kV Chabacho feeder (Fdr.IV)	TRAFO DIFFL. PROTN. RELAY 87 Indication. 1,3,4 & 5. 1.General Trip, 1.Diff Trip Yph 4.Diff Trip Bph 5.Diff Prot Oper.DIR.-O/C & E/F PROTN.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 (Chabacho).Charged the feeder and hold normal.
6	4/22/2021	11:15	4/22/2021	11:17	0	8.81	20MVA Transformer I	Only 33KV Chabacho feeder IV was effected as the other feeders was fed from Transformer II	Due to tripping of 33kV Chabacho feeder (Fdr.IV)	TRAFO DIFFL. PROTN. RELAY 87 Indication : 1,3,4 & 5. 1. General Trip ,1.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot Oper. Trip Relay 86.	Line Segment	Transient Fault	66/33kV 20MVA Transformer I tripped due to tripping of 33kV O/G IV (Chabacho feeder).Charged the feeder after confirmation and clearance received from FSD 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 Deothenkholing 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 Punctured broken	only 86 relay	Opposite of Dling S/S, 66kV line Semtokha 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 punctured/broken due to low rating. 66kV incomer line tripped from semtokha end, however,both 10MVA Tr. are tripped at our end.
	(H) 66/11kV Haa 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	Paro(wa substation,Paro	66kV incomer tripped from Paro(wa substation on overcurrent. The same was normalized 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	Paro(wa substation,Paro	66kV incomer tripped from Paro(wa substation on overcurrent. The same was normalized further.		

	(I) 220kV Substation Semtokha												
1	08.04.2021	10:44hrs	08.04.2021	10:52hrs	0.00	21.560	50MVA Transformer 1	220kV Semtokha Substation	R phase Isolator punctured above Dechencholing	HV and LV Backup protection Optd. (HV: Ia=167.2A, Ib= 61.27A, Ic=61.11A);(LV: Ia= 979.7A, Ib=195.2A, Ic= 195.4A)	220kV Semtokha Substation	Transient	
2	08.04.2021	10:44hrs	08.04.2021	10:45hrs	0.00	21.610	50MVA Transformer 2	220kV Semtokha Substation	R phase Isolator punctured above Dechencholing	HV and LV Backup protection Optd. (HV: Ia=156.1A, Ib= 119.3A, Ic=84.66A);(LV: Ia= 969.5A, Ib=380.3A, Ic= 281.6A)	220kV Semtokha Substation	Transient	
3	28.04.2021	12:10hrs	28.04.2021	12:14hrs	0.00	17.870	50MVA Transformer 1	220kV Semtokha Substation	Due thunder and lightning Dechencholing line triped and simultaneously both 50MV tripped.	Differential protection optd. HV and LV Backup protection Optd.	220kV Semtokha Substation	Transient	
4	28.04.2021	12:10hrs	28.04.2021	12:14hrs	0.00	17.900	50MVA Transformer 2	220kV Semtokha Substation	Due thunder and lightning Dechencholing line triped and simultaneously both 50MV tripped.	Differential protection optd. HV and LV Backup protection Optd.	220kV Semtokha Substation	Transient	
5	08.04.2021	10:44hrs	08.04.2021	10:58hrs	0.00	8.850	66kV Semtokha-Dechencholing Feeder	220kV Semtokha Substation & 66kV Dechencholing Substation	R phase Isolator punctured above Dechencholing	Ia=- Trip Ia= 1.95kA, Ib=56.87A, Ic=45.21A		Permanent	
6	28.04.2021	12:10hrs	28.04.2021	12:21hrs	0.00	7.420	66kV Semtokha-Dechencholing Feeder	220kV Semtokha Substation & 66kV Dechencholing Substation	R phase Isolator punctured above Dechencholing	Distance Protection Optd. Ia=- Trip Ia= 3.310kA, Ib=74.6A, Ic=62.66A		Transient	
	(J) 66/33/11kV Pangbesa substation												
1	02.04.2021	11:10Hrs	02.04.2021	11:19Hrs	0	2.25	66kV OG-Haa feeder	Haa	O/C			Transient	
2	09.04.2021	14:07Hrs	09.04.2021	14:10Hrs	0	1.74	66kV OG-Haa feeder	Haa	O/C			Transient	
	(K) 66/33kV Chunglingkha Substation												
	(L) 66/33kV Jhanji Substation												
1	08.04.2021	10:44hrs	11.04.2021	1:40hrs	76	-0.29	33/6kV Incoming line		Failure of insulator	NA			66kv incoming line was tripped at 10:44 hrs and line at Jhanji Substation had been back feed from Punakha at 14:07 hrs. 66kv line charged at 17:40 hrs as per the closing code 1961 from BPSO.
2	28.04.2021	12:10hrs	28.04.2021	12:27hrs	0	-0.29	6/33kv incoming line		Hand trip	NA			66kv line breakdown (Hand trip) from Semtokha.

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	13:40	3	-44	220kV Chukha-Malbase Feeder 2	Malbase s/s	Overcurrent	[illegible]	L2-N-10.97 km	Overcurrent fault	[illegible]
2	3.05.2021	14:25	03.05.2021	15:42	1	23	70/63 Rva Trafo 1	Malbase S/S	Overcurrent	[illegible]		Overcurrent fault	[illegible]
3	03.05.2021	14:50	03.05.2021	14:56	0	10	220kV Malbase-Samtse Feeder	Dhamdum S/s	Earth fault	[illegible]	[illegible]	Overcurrent fault	[illegible]
4	3.05.2021	15:01	03.05.2021	15:32	0	9	220kV Malbase-Samtse Feeder	Dhamdum S/s	Earth fault	[illegible]	[illegible]	Overcurrent fault	[illegible]
5	03.05.2021	0:22	03.05.2021	0:31	0	7	220kV Malbase-Samtse Feeder	220kV samtse feeder	Overcurrent	[illegible]		Overcurrent fault	[illegible]
6	04.05.2021	1:08	04.05.2021	1:15	0	16	66 kV Pasakha Feeder 1	66kV pasakha feeder 1	Overcurrent	[illegible]		Overcurrent fault	[illegible]
7	04.05.2021	1:08	04.05.2021	1:15	0	20	66 kV Pasakha Feeder 2	66kV pasakha feeder 2	Overcurrent	[illegible]		Overcurrent fault	[illegible]
8	04.05.2021	1:08	04.05.2021	1:15	0	21	66 kV Pasakha Feeder 4	66kV pasakha feeder 4	Overcurrent	[illegible]		Overcurrent fault	[illegible]
9	11.05.2021	18:17	12.05.2021	12:43	18	72	200 MVA ICT Malbase S/s	Malbase S/S	Buchholz Trip	[illegible]	ICT B phase transformer		[illegible]
(B)220/66/11 kV Singhigaon Substation													
1	03.05.2021	15:11	03.05.2021	16:03	0	3.5	220kV Singye Samtse	GIS, Singhigaon 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	Line		
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			

(D) 66/33/11 kV Gedu Substation													
1	03.05.2021	13:37	3.05.2021	16:15	[illegible]	1.73	66kV Chukha-Phuentsholing	Black out	Due to bad weather		Line segment		Weather condition: Heavy Rainfall. 66kV line was charged from Chukha after improving the weather condition.
2	03.05.2021	15:10	03.05.2021	15:16	[illegible]	1.73	66kV Chukha-Phuentsholing	Black out	Due to bad weather		Line segment		Weather condition: Heavy Rainfall. 66kV line was charged from Chukha after improving the weather condition.
3	06.05.2021	16:12	10.05.2021	20:33	[illegible]	0.44	5MVA 66/33kV Tx-III	33kV Gurungdhara feeder -I and II	33kV Supply extended from 33kV Gurungdhara-I		Substation	Shutdown	Taken shutdown for installation and commissioning of 33kV Bus section-II panels vide work permit No. [illegible] issued to Mrs. Kinchen Zangmo, Sr. Engineer of [illegible]
4	10.05.2021	9:26	10.05.2021	9:40	[illegible]	0.6	8MVA 66/33kV Tx-I	33kV Gurungdhara feeder -I	Bad weather	Differential fault on R phase	Line segment		Weather Condition: Thundering and Raining. Tx charged after weather got clear and stood normal.
5	14.05.2021	8:42	14.05.2021	8:46	[illegible]	1.54	66kV Chukha-Phuentsholing line	Black out	Due to bad weather		Line segment		Weather condition: Raining and thundering. 66kV line charged from Phuentsholing end.
6	19.05.2021	16:45	19.05.2021	16:55	[illegible]	0.55	8MVA 66/33kV Tx-I	33kV Gurungdhara feeder -I & 33kV Gurungdhara-II	REF	REF	Line segment		Tx charged and held normal.
7	20.05.2021	15:33	20.05.2021	15:42	[illegible]	0.41	8MVA 66/33kV Tx-I	33kV Gurungdhara fdr-I	REF	REF	Line segment		Tx charged and held normal.
(E) 66/33/11 kV Gomtu Substation													
1	03.05.2021	15:11	03.05.2021	15:16	[illegible]	-5.506	66kV Dhamdum	Gomtu Substation	Nil	Nil	Malbase Substation	Tripped on Fault	66kV supply tripped from Malbase Sub Station.
2	04.05.2021	12:32	04.05.2021	19:54	7	-7.029	66kV Dhamdum	Nil	Over Current	General trip, Zone-trip, R ph fault, Y ph fault, B ph fault V T fuse fail	66kV Samtse-Gomtu Line	Tripped on Fault	66kV Dhamdum tripped due to rainstorm and supply could not withstand from the fault and thereby test charged [illegible] at 07:54 hours and the line withstood.
3	05.05.2021	13:59	05.05.2021	14:08	[illegible]	-10.734	66kV Dhamdum & Gomtu-Phuentsholing	Whole Gomtu	Over Current/Transient Fault	General trip, Zone-#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 [illegible] at 14.08hours. 66kV Gomtu-Phuentsholing supply remained at 13:43hrs.
(F) 220/66/33 kV Dhamdum Substation													
220kV													
1	03.05.2021	15:11	3.05.2021	16:04	[illegible]	-4.19	Singyegang Dhamdum Feeder	Dhamdum S/S	Transient fault	RELA70(21L-001)	6.5 KM	Line fault	L1 &N Fault, Fault distance 6.5 Km, Zone -1 fault.
2	04.05.2021	8:21	04.05.2021	8:35	[illegible]	-1.95	Singyegang Dhamdum Feeder	Dhamdum S/S	Transient fault	RELA70(21L-001)	20 KM	Line fault	Line tripped due to heavy rainfall and lightning and thunder. Line fault record as under: Zone 1, 4Phase to phase fault(R to B) Distance/fault location[20.1KM(50.3%)]
66kV													
1	04.05.2021	6:34	04.05.2021	7:29	[illegible]	7.02	Gomtu feeder	NA	Heavy rainfall and lightning and thunder	RELA70(21L)	NA	Line fault	Line tripped due to heavy rainfall and lightning and thunder. Line fault record as under: Zone 1, [illegible]
2	05.05.2021	13:54	05.05.2021	14:06	[illegible]	12.33	Gomtu feeder	NA	Heavy rainfall and lightning and thunder	RELA70(21L)	NA	Line fault	Line tripped due to heavy rainfall and lightning and thunder. Line fault record as under: Zone 2&3 started. 1 [illegible]

Tripping Report for the month of MAY 2021

Sl. No.	Date of Tripping	Time of outage	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 Chumdo switching station													
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Paro and Punghasn	Transient fault	[illegible]	Chumdo	Trip	
2	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	Paro and Punghasn					
3	[illegible]	[illegible]	[illegible]	[illegible]	2hrs	[illegible]	[illegible]	[illegible]	Fault at Olakha end	CB open	Fault at Olakha end	Trip	[illegible]
(B) 66/33kV Watsa Substation													
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			Trip	
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Shutdown	
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			Shutdown	

	(C) 66/33kV Olakha Substation												
1	5/3/2021	13:49	5/3/2021	13:51	0	6.9	20 MVA transformer I	Olakha substation and all outgoing feeders					Supply fail from Chukha (and fail) supply fail from Chukha at 13:49hrs and charge at 13:50hrs.
2	9/9/2021	16:22				6.9	66kV Olakha-Changidapha Line	66kV Olakha-Changidapha Line		On Relay 7SA611 Distance Protection Relay 21: 1. General Trip 2. Distance Operated 3. Zone One Operated along with Tripping relay 86 operated. On Relay 7SJ62: 1. General Tripped, 2. Direction Over Current and Earth Fault Operated.	IT park near Serbithang		The 66kV Olakha-Changidapha 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 happened, 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	9/9/2021	16:22	9/9/2021	17:24	1		66kV Bus Coupler	Olakha Substation		On Relay 7SJ62 Over Current and Earth fault Protection Relay 50/51: 1. General Trip 3. Earth Fault Operated 4. LBB start along with Tripping relay 86 operated.			Supply fail from 66kV Semtokha Line and 66kV Changidapha Line
4	9/9/2021	16:52	9/9/2021	17:23	0	14.8	66kV Semtokha-Olakha line	Olakha substation and all outgoing feeders		On Relay 7SA611 Distance Protection Relay 21: 1. General Trip 2. Distance Operated 3. Zone One Operated 12. LBB Operated along with Tripping relay 86 operated.			Supply fail from 66kV Semtokha Line and 66kV Changidapha Line
5	9/11/2021	15:52	9/11/2021	15:53	0	13.7	66kV Olakha-Semtokha	Olakha substation and all outgoing feeders		LLLB operated			Feeder was tripped while Test charging of 66kV Olakha-Changidapha feeder which was under shutdown for changing of 1 phase Conductor between death end tower and 66kV gantry at Olakha substation. After resetting all relays,test charge the feeder and hold normal.
6	9/11/2021	15:52	9/12/2021	17:10	25	6.5	66kV Olakha-Changidapha Line	66kV Olakha-Changidapha Line	conductor burnt at IT park	On DISTANCE PROTN Relay 21.1.General Trip 2. Distance Operated 3.Zone 1 Operted along with Tripping relay 86 operated.	IT park		Shutdown taken by Dagchu Wangdi to provide tension fittings for long span valley crossing and critical. As per Approval request no. [illegible] and approved no [illegible]. Breaker open, line and bus isolator open and earth switch close at both Olakha and Changidapha end. BPSO Shutdown code [illegible]. Shutdown was returned by Mr Chandu [illegible] of TMD/Olakha after changing of 1 phase Conductor between death end tower and 66kV gantry at Olakha substation. After receiving code no.2210 from BPSO. Feeder was test charged but could not hold and tripped again. Feeder was kept shutdown for further line patrolling by line staffs. After completion of work, charged the feeder with BPSO code no.2127 and hold normal.
7	9/11/2021	15:52	9/11/2021	16:05	0		66kV Bus Coupler	Olakha Substation	DCAST and Distance protection	Trip Relay 86	Olakha-Changidapha feeder	Temporary	Feeder was tripped while Test charging of 66kV Olakha-Changidapha feeder which was under shutdown for changing of 1 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 Lobeysa Substation												
1	05.05.2021	12.43hrs	05.05.2021	13.06hrs		-7.180	66kV LSA-Basochu	NA	NA	NA	NA	NA	Grid fail from Basochu Plant(machine tripped)
2	24.05.2021	00.15hrs	24.05.2021	01.22hrs	1	0.000	66kV Basochu- LSA	NA	Grid fail	NA	Basochu	Black out	66kV LSA-Dozhala feeder tripped at 00.15hrs with out any relay & breaker is operated at
3	10.05.2021	11.45hrs	10.05.2021	13.40hrs	1	0.000	66kV LSA-Dozhala	NA	Cable problem at	OC/EF relay operated	Dozhala end	NA	66kV LSA -Dozhala feeder tripped on OC/EF relay operated, opening breaker at our end
4	10.05.2021	16.00hrs	10.05.2021	17.05hrs	0	0.000	66kV LSA-Dozhala	NA	Cable problem at	OC/EF relay operated	Dozhala end	NA	66kV LSA -Dozhala feeder tripped on Dist & OC/EF relay operated, opening breaker at
5	22.05.2021	11.15hrs	22.05.2021	11.57hrs	0	14.210	66kV LSA-Dozhala	NA	NA	86 relay operated	NA	NA	66kV LSA-Dozhala feeder tripped at 11.15hrs operating breaker open at our end at that
6	24.05.2021	00.15hrs	24.05.2021	01.22hrs	1	0.000	66kV LSA-Dozhala	NA	Grid fail	NA	Basochu	Black out	66kV LSA-Dozhala feeder tripped at 00.15hrs with out any relay & breaker is operated at
7	27.05.2021	08.08hrs	27.05.2021	23.25hrs	14	20.050	66kV LSA-Dozhala	NA	Shutdown	NA	NA	NA	66kV LSA -Dozhala-Semtokha taken shutdown as per approval
	(E) 66/33/11 kV Paro Substation												
1	5/3/2021	13.55hrs	5/3/2021	14.07hrs	0	2.2	66kV Chumdo Line in	Outage of all incoming and outgoing feeders	Tripped from chukha				Grid failure from chukha
2	5/9/2021	13.55hrs	5/9/2021	16.28hrs	0	2	66kV Chumdo Line in	Outage of all incoming and outgoing feeders	Tripped from chukha				
	(F) 66/33/11kV Jemina Substation												
1	03.05.2021	13:47	03.05.2021	14:10	0	-1.24	66 kV Changidapha	_	Distance relay operated with auto reclose lock out	Distance relay			CB-B operation: [illegible]. Charged the feeder at 14:10 Hrs. upon communicating with BPSO Operator.
2	03.05.2021	14:07	03.05.2021	14:28	0	1.29	66 kV Chumdo	_	Distance relay operated with auto reclose lock out	Distance relay			[illegible]. Charged the feeder at 14:28 Hrs. upon communicating with BPSO Operator.
3	09.05.2021	16:20	09.05.2021	19:17	2	1.89	66 kV Chumdo	Black out	Non directional EF operated & auto reclose lock out	50G-1 trip			[illegible] upon communicating with BPSO Operator, the Substation was supplied from Chumdo at 19:17 Hrs till Changidapha end.
4	09.05.2021	16:20	09.05.2021	19:17	2	-1.42	66 kV Changidapha	Black out	Non directional EF operated & auto reclose lock out	50G-1 trip			[illegible] upon communicating with BPSO Operator, the Substation was supplied from Chumdo at 19:17 Hrs till Changidapha end.

	(G) 66/33/11kV Deothang(Sh) substation												
1	01.09.2021	11:00hrs	01.09.2021	14:07hrs	0	-6.034	66kV I/C	...	Supply failed from source				
2	08.09.2021	01.20Hrs	08.09.2021	01.29Hrs	0	0.125	66KV Gaus O/G	...	Over current	O/C,& 86 A& B	Gaus end	tripped	Fdr tripped due fault at Gaus end.
3	09.09.2021	16.22Hrs	09.09.2021	17.12hrs	0	-6.228	66KV I/C	...	Supply failed from Semtokha				
4	15.09.2021	18.53hrs	15.09.2021	19:00hrs	0	-5.481	10MVA Tr I & II	...	Over current	50R & 50G 86	Not known	tripped	Transformer tripped due to poking of 11KV Thimphu Hydro fault
5	17.09.2021	11.43hrs	17.09.2021	11.50hrs	0	-1.227	-do-	...	REF prote.	86 relay	-do-	tripped	Transformer tripped on REF prote.
6	01.09.2021	09:42 Hrs	01.09.2021	17:19Hrs	7 hrs	3.784	10MVA Tr-II	Nil	Shut down taken by Project Office Olakha TPO for fixing the 10MVA Transformer accessories by Hydro machine.				
7	01.09.2021	17.43hrs	01.09.2021	19:00Hrs	1 hrs	6.028	10MVA Tr-I	Nil	Shut down issued to TPO olakha to installed conservator Tank at new 10MVA Transformer by Hydro machine				
8	01.09.2021	18:15Hrs	01.09.2021	19:30Hrs	1 hrs	8.662	10MVA Tr-II	Nil	10MVA-II Transformer shut down taken by Olakha TPO for connecting conservator accessories.				
9	01.09.2021	11.10 hrs	01.09.2021	17.44hrs	5 hrs	2.898	10MVA Tr-II	Nil	Shut down issued to TPO olakha for transporting the filter Machine is overlayed by Hydro Machine.				
10	04.09.2021	11.10Hrs	04.09.2021	11.21 hrs	0	3.674	10MVA Tr-II	Nil	TPO project In Engineer took the shut down for unloading another filter machine at transformer yard by the Hydro machine.				
11	04.09.2021	11.37Hrs	04.09.2021	12.36Hrs	0	3.874	10MVA Tr-I	Nil	Same work				
12	06.09.2021	12.36Hrs	06.09.2021	18:02hrs	days	7.427	10MVA Tr-II	Nil	Shifting of Filter machine to other location by Hydro Machine.				
13	08.09.2021	12.15Hrs	08.09.2021	19:00Hrs	days	3.391	10MVA Tr-I	Nil	Shut down taken by Project Office Olakha TPO for fixing the 10MVA Transformer-I radiator/fan from IPT side by Hydro Machine.				
14	12.09.2021	10:30Hrs	12.09.2021	16.43hrs	9hrs	3.977	10MVA Tr-II	Nil	Shut down taken by Project Office Olakha TPO for fixing the 10MVA-II Transformer-II HV bushing current transformer with help of Hydro Machine.				
15	13.09.2021	09:10hrs	13.09.2021	18:13hrs	9hrs	3.173	10MVA Tr-II	Nil	Installation of bushing CT as new 10MVA trans -II				
16	14.09.2021	09:15Hrs	14.09.2021	18:54Hrs	9hrs	3.823	10MVA Tr-II	Nil	Shut down by PTO office to fixed the pipe line of conservator tank to main transformer body.				
17	15.09.2021	09:30hrs	15.09.2021	16:55hrs	6	3.043	10MVA Tr-II	Nil	For shifting the filter machine from transformer II location to near the transformer I				
18	15.09.2021	11:10hrs	25.09.2021	24.22Hrs	2hrs	2.898	10MVA Tr-I & 1.5MVA Tr-I	Nil	Shut down taken by HSD maintenance team to made alignment of 11KV side Bus coupler Isolator, spare IB line & bus isolator.				
19	17.09.2021	14:50hrs	17.09.2021	19:09hrs	days	4.733	10MVA Tr-II	Nil	Shut down taken by Olakha project office to connect the pipe.				
20	17.09.2021	16:30Hrs	17.09.2021	17:18hrs	days	0.728	10MVA Tr-II	Nil	Shut down availed by project staff for fixing and adjustment of pipe on conservator tank				
21	18.09.2021	10:45hrs	18.09.2021	18.20hrs	7hrs	2.729	10MVA Tr-II	Nil	Shut down availed by HSD semtokha into trans in for retrofitting new digital relay of 10MVA-II				
22	18.09.2021	10:02hrs	18.09.2021	14:09Hrs	days	2.332	10MVA Tr-I	Nil	For shifting of CCTV for MGV (main)				
23	14.09.2021	14:10Hrs	14.09.2021	19:30Hrs	days	3.908	10MVA Tr-II	Nil	Replacement of CT at HV & LV side of 10MVA Tr-II by Send out. semtokha				
24	20.09.2021	15:10Hrs	20.09.2021	19.29hrs	9hrs	3.329	10MVA Tr-II	Nil	Continuation of replacement of HV CT and testing of relay.				
25	21.09.2021	10:30hrs	21.09.2021	18:30Hrs	9hrs	3.179	10MVA Tr-II	Nil	10MVA transformer-II Tan Delta test and IR test by SHD/semtokha team.				
26	22.09.2021	10:30hrs	22.09.2021	18:59Hrs	9hrs	2.399	10MVA Tr-II	Nil	Shut down taken by Olakha TPO for testing of LV side CT of 10MVA Transformer & installation of relay.				
27	24.09.2021	10:15hrs	24.09.2021	16.15hrs	days	3.97	10MVA Tr-II	Nil	For Testing 10MVA Tr-II				
28	24.09.2021	10.15hrs	24.09.2021	19:15Hrs	days	3.420	10MVA Tr-I	Nil	For installation of Radiator at 10MVA Tr-I				
29	25.09.2021	09.55hrs	25.09.2021	20.12hrs	10hrs	3.11	10MVA Tr-II	Nil	For testing 10MVA Tr-II & installation of blister in control room.				
30	26.09.2021	14:05hrs	26.09.2021	16:44Hrs	2hrs	3.89	10MVA Tr-II	Nil	Continuation of testing 10MVA -Tr-II				
31	27.09.2021	10:05hrs	27.09.2021	11:49Hrs	1hrs	2.209	10MVA Tr-II	Nil	For installation of HV & LV bushing of 10MVA Transformer-II				
32	29.09.2021	12:12hrs	29.09.2021	14:22hrs	2hrs	0	10MVA Tr-II	Nil	For releasing the Air from Transformer for loading				
33	31.09.2021	11:17hrs	31.09.2021	15:47hrs	4hrs	0	10MVA Tr-II	Nil	For testing 10MVA relay				
34	31.09.2021	11.22Hrs	31.09.2021	17:44Hrs	4hrs	0	10MVA Tr-II	Nil	For testing 10MVA Tr I/V side CT				
	(H) 66/11kV Bus Substation												
1	08.09.2021	16:21	08.09.2021	16:27	0	-1.98	66kV Incomer, along with all the feeders.	substation	0/G	Source Sub. Olakha	66kV incomer tripped from the source on overcurrent. The same was normalized further.		
2	29.09.2021	19:31	29.09.2021	19:35	0	-5.34	66kV Incomer, along with all the feeders.	substation	O/C	Pasakha substation,Paro	66kV incomer tripped from Pasakha substation on overcurrent. The same was normalized further.		
	(I) 220kV Substation Semtokha												
1	22.09.2021	11.10hrs	22.09.2021	11.27hrs	1.00	-28.946	220kV Semtokha-Chukha Line	220kV Semtokha-Chukha Line	Transient L2-L3 Fault	Fault Loop= L2-L3, Zone-	44.4km	Transient	No customer affected
2	22.09.2021	11.27hrs	22.09.2021	12:17hrs	0.00	-28.946	220kV Semtokha-Chukha Line	220kV Semtokha-Chukha Line	Transient L2-L3 Fault	Fault Loop= L2-L3, Zone-	45.4km	Transient	No customer affected
3	25.05.2021	09:23hrs	25.05.2021	09:43hrs	0.00	16.000	220kV Semtokha-Chukha Line	220kV Semtokha-Chukha Line	Transient L2-N Fault	Fault Loop= L2-N,	54km	Transient	No customer affected
4	09.09.2021	16.23hrs	09.09.2021	16.27hrs	0.00	19.750	50MVA-1	Semtokha ends Olakha ss	Tripped along with 66kv			Transient	Whole Thimphu
5	09.09.2021	16.27hrs	09.09.2021	17.20hrs	0.00	19.750	50MVA-1	Semtokha ends Olakha ss	Tripped along with 66kv	Backup Protection Optd.		Transient	Whole Thimphu
6	11.09.2021	13.51hrs	11.09.2021	13.55hrs	0.00	12.660	50MVA-1	Semtokha ends Olakha ss	66kV Olakha Line from	Differential protection Optd.		Transient	No customer affected
7	09.09.2021	16.23hrs	09.09.2021	16.28hrs	0.00	19.750	50MVA-2	Semtokha ends Olakha ss	Tripped along with 66kv Olakha line	Earth fault, HV & LV Backup Protection Optd.	--	Transient	Whole Thimphu
8	09.09.2021	16.28hrs	09.09.2021	17.15hrs	0.00	19.750	50MVA-2	Semtokha ends Olakha ss	Tripped along with 66kv Olakha line	Earth fault, HV & LV Backup Protection Optd.		Transient	Whole Thimphu
9	09.09.2021	16.19hrs	09.09.2021	17:10hrs	0	16.750	66kV Semtokha-Olakha Line	Semtokha ends Olakha ss	Directional EF	Directional EF		Transient	Whole Thimphu
10	11.09.2021	13.51hrs	11.09.2021	13.58hrs	0	11.83	66kV Semtokha-Olakha Line	66kV Semtokha-Olakha Line	Dir. EF/OC	Ia=1.01kA,Ib=-0.91kA, Ic=111.2A		Transient	No customer affected
11	25.05.2021	09:23hrs	25.05.2021	09:29hrs	0	3.25	10MVA-1	All 11kV Outgoing fe	OC/EF	OC/EF		Transient	All 11kv Direct customers affected.
12	25.05.2021	09:23hrs	25.05.2021	09:29hrs	0	3.25	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	00:41hrs		9.500	Semtokha Substation	Shutdown taken by Penta Lotho to remove droping conductor of sectionalizer of 66kV bus					
14	31.05.2021	23:44hrs	01.06.2021	09:24hrsdays	0.00	9.950	Semtokha Substation	Shutdown taken by Penta Lotho to remove droping conductor of sectionalizer of 66kV bus					
15	31.05.2021	23:44hrs	01.06.2021	00:44hrs	1.00	10.650	Semtokha Substation	Shutdown taken by Penta Lotho to remove droping conductor of sectionalizer of 66kV bus					
16	31.05.2021	23:42hrs	01.06.2021	00:45hrs	1.05	1.420	Semtokha Substation	Shutdown taken by Penta Lotho to remove droping conductor of sectionalizer of 66kV bus					
17	31.05.2021	23:43hrs	01.06.2021	09:24hrsdays	9.00	1.419	Semtokha Substation	Shutdown taken by Penta Lotho to remove droping conductor of sectionalizer of 66kV bus					

	(Jb66/33/11kV Pangbesa substation												
1	29.05.2021	16:19hrs	29.05.2021	16:22hrs	0	2.2	66kV DC Han feeder	Han	O/C			Transient	
	(k) 66/11kV Changlingkha Substation												
1	09.05.2021	16:12hrs	12.05.2021	17:08hrs	71	-1.92	66kV Olakha-Changlingkha Line	Changlingkha and Olakha ss	Rph Conductor snapped and got contact with Yph conductor		Babesa near IT park	Permanent	
2	14.05.2021	08:10hrs	14.05.2021	18:10hrs	10.00	-5.810	66kV Olakha-Changlingkha Line	Changlingkha and Olakha ss	No Indication			Permanent	TMD carried out the maintenance work on the same line
3	08.05.2021	16:10hrs	12.05.2021	17:10hrs	99.00	-1.910	66kV Olakha-Changlingkha Line	66kV Olakha-Changlingkha Line	Shutdown taken by TMD to rectify Rph conductor near IT park Babesa				
4	13.05.2021	08:25hrs	13.05.2021	17:30hrs	8.00	-1.920	66kV Olakha-Changlingkha Line	66kV Olakha-Changlingkha Line	Annual Maintenance of the line by TMD				
5	14.05.2021	08:10hrs	14.05.2021	18:41hrs	10.00	5.810	66kV Olakha-Changlingkha Line	66kV Olakha-Changlingkha Line	Annual Maintenance of the line by TMD				
6	17.05.2021	08:15hrs	17.05.2021	18:25hrs	10.00		66kV Olakha-Changlingkha Line	66kV Olakha-Changlingkha Line	Annual Maintenance of the line by TMD		Near Jemina		
	(L) 66/33kV Dhanji Substation												
1	03.05.2021	13:34hrs	03.05.2021	14:09hrs	0	-28	66/33kv Incoming line		Outages				Outages of 66kv line from Dhajj due to grid failure from the source

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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	3	21	50/63MVA Transformer I	Malbase s/s	Overcurrent	General trip, LBB trip, 86 optd, 51 trip.	66kV Pling line	Overcurrent fault	IL1=759.97A<-1.97 deg, IL2=758.2A<-124.4deg, IL3=733.86A<-11.87deg,IL4=22.11A<-127.04deg, 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	3	21	66kV Pasakha feeder I	Malbase S/S	Overcurrent	50trip,86 optd,General trip	66kV Pling line	Overcurrent fault	IL1=991.76A<-8.95 deg, IL2=1324A<-134deg, IL3=1164A<-115.45deg,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 Pling line	O/C & E/F	IL1=769.81A<-89.3 deg, IL2=340.5A<115.9deg, IL3=138.67A<-91.5deg,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]=1.5> IDMTL 1A=10624, PHASE B [FWD] 51.66A, PHASE C[FWD] IC=112.7A, E/F [FWD] IDMTL 1E=974.5A
5	05.06.2021	20:37	05.06.2021	20:45	0	21	50/63MVA Transformer III	Malbase S/S		OLTC-BUCH trip			IL1=29.1A<99.23 deg, IL2=69.09A<-176.39deg, IL3=121.26A<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 Pling line	Overcurrent fault	IL1=768A<-3.29 deg, IL2=694.51A<133.45deg, IL3=392A<137.94deg,IL4=614A<137.75deg
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 Pling line	Overcurrent fault	IL1=549A<10.19deg, IL2=175.3A<139.15deg, IL3=209.96A<130.42deg,IL4=171.57A<-130.20deg
8	06.06.2021	23:20	06.06.2021	23:26	0	-	220kV Bus Coupler	Malbase S/S	Overcurrent	SPAJ 140C relay optd. I> trip,	66kV Pling 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 Pling line	Overcurrent fault & E/F	IL1=769.84A<-23.75deg, IL2=290.58A<-17.36deg, IL3=68.15A<-33.41deg,IL4=769.5A<-23.75deg
10	12.06.2021	9:19	12.06.2021	9:26	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<-76.96deg, IL3=166.6A<90.27deg,IL4=2538.37A<-133.02deg
11	12.06.2021	9:19	12.06.2021	9:26	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<60.72deg, IL2=1233.14A<-95.39deg, IL3=760.98A<56.88deg
12	12.06.2021	9:19	12.06.2021	9:26	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=1113.45A<-51.27deg, IL2=801.95A<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=151.76A<127.77deg,IL4=2651.87A<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<-140.89deg, IL2=1299.73A<-167.96deg, IL3=840.99A<-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=304.8A<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]=1.5> IDMTL 1A=1190A, PHASE B [FWD] IB= 166.3A, PHASE C[FWD]=1.5>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<-133.85deg, IL3=59.47A<-175.64deg,IL4=186.2A<-150.46deg
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 Singhigaon Substation													
1	05.06.2021	20:37	05.06.2021	21:07	0	7	220kV Samtse feeder	GIS, Singhigaon s/s	E/F	O/C trip, 86 trip.	Samtse line	E/F	IL1=5006 A, IL2=64.75A, IL3=63.95A, IA =4066A
2	12.06.2021	9:19	12.06.2021	9:29	0	5	66kV Bhutan Concast & Druk cement Feeder	GIS, Singhigaon s/s	Overcurrent	General trip, O/C trip, IE=> trip, I=> Directional trip,IEF 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, Singhigaon s/s	Overcurrent	I=>D irectional trip, General trip	-	Overcurrent Fault	IL1=5.20kA, IL2=0.42kA, IL3=0.20kA

(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,TWD Pling with work permit no 522 for re-string snapped conductor between location PS-3 & PS-4. After completion of works at 10.30hrs 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 hr]. 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 0000 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 1078 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	0.90	66kV Pling-Gomtu feeder	66kV Pling-Gomtu feeder		DSTN OPTD, 186&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 as 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 0186 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	29.06.2021	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	11:06	05.06.2021	13:50	2	0.10	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	20:13	2	1.16	66kV Chukha -Pling Line	Black out	Rectification 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	1.50	66kV Chukha -Pling Line	Black out	Rectification 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	572	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	18:00	20.06.2021	18:40	0	1.40	66kV Chukha -Pling Line	Black out	Rectification 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	0.70	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	-0.361	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	ID86TL Over Current 51AR,51BR,51CR	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 Singaygaon	N/A	Transient fault	REL670 General trip,Zone-1, R Ph	N/A	N/A	220kV singaygaon feeder tripped from both the end and charge at 20:46hrs as per the clearance given by BPSO, T/phu. Dist. Showing :19.5Kms 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~DIR:(y/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	10:28	24.07.2021	21:49	3	22	50 MVA Transformer III	Malbase S/S	Inter Tripped as 400kV mapped and touched on the 66kV Multicircuit feeder going towards Industerial 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	10:28	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=184.57A, I3=400A, I4=576.68A
3	24.07.2021	10:28	30.07.2021	12:46	138	20	66 kV Panakha fdr I	Malbase S/S		86,operated. IOC-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	10:28	30.07.2021	12:46	138	20	66 kV Panakha fdr II	Malbase S/S		86 operated. IOC-50- trip, IEF-50N-TRIP	fault on 66kV multicircuit Line.	Overcurrent fault	I1=0.16A, I2=454.65A, I3=166.36A,
5	24.07.2021	10:28	30.07.2021	12:45	138	20	66 kV Panakha fdr IV	Malbase S/S		86 operated. General trip IEF 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		DITN 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 18:34hrs test charged after getting clerance 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 optd. 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	10:30	24.07.2021	19:05	0	-7.33	220kV Malbase	220kVMalbase	Line fault	NA	Malbase	N/A	220 kV Malbase -Dhamdum and 220 kV Singaygoan - Dhamdum feeder got tripped from Malbase substation. We were informed that the Conductor has snap and fallen on the
2	24.07.2021	10:30	24.07.2021	19:05	0	-0.6	220kV Singaygoan	220kVSingaygoan	Line fault	NA	Singaygoan	N/A	Multicircuit at Malbase substation causing tripping of 220 kV (bus coupler and ICT) . After isolating the fault , line was
3	24.07.2021	10:30	24.07.2021	18:56	0	3.95	66 kV Gomtu	66 kV Gomtu	Line fault	NA	Gomtu	N/A	Since 220 kV (Malbase and Singaygoan) 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 -Damdum charged. No tripping of CB was encountered in Dahmdum substation.

	(C) 66/33kV Olakha Substation												
1	7/7/2021	8:08	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)	TRAFO DIFFL PROTN. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Opnd.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	TRAFO DIFFL PROTN. RELAY 87.Indication : 1,3,4 & 5. 1. General Trip 3.Diff Trip Yph.4.Diff Trip Bph.5.Diff Prot.Opnd.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	5.5	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	TRAFO DIFFL PROTN. 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	TRAFO DIFFL PROTN. 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 ports 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	TRAFO DIFFL PROTN. RELAY 87.Indication : 1,4 & 5. 1. General Trip 4.Diff Trip Bph.5.Diff Prot.	Olakha	Temporary	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 ports 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		21.030	50MVA-II	Semtokha SS	Over Current	RET316 relay opid.	-	Transient	
2	21.07.2021	16.35hrs	21.07.2021	16.40hrs		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	410	400kV Tala - Malbase feb	Malbase S/S	tripped due to OC on Y phase at Tala end.	A/R start, A/R L/out	line fault	Overcurrent fault	No fault displayed, B6 did not operate but both Main and Tie breaker open/tripped
2	17.08.2021	1.40	17.08.2021	1.56	0	133	220kV Chukha feeder	Malbase S/S	tripped due to OC on B phase	Dist trip, Zone3,AR lovation shot.	Distance=10.23km	Overcurrent fault	IL1=2685A, IL2=951.5A, 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.	B6,operated. Diff Trip.	Switch Yard	tripped	IL1=91.45kA=-68.65deg. IL2=151.5k=-109.62deg. IL3=74.07A=-115.61deg, IL4=279.2kA=-99.61deg
4	25.08.2021	1.21	25.08.2021	14.00	12	73	200 MVA ICT	Malbase S/S	Buchholz trip	B6,B phase BOOH trip	transformer yard	tripped	IL1=0.121A=-50.21deg. IL2=0.032A=-135.6 deg, IL3=.007A=-98.2deg
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. Pares Ram Mishra, SHE, plng. for rectification of Buchholz trip.
(B)220/66/11 kV Singkigaon Substation													
1	19.08.2021	14.44	20.08.2021	20.09	29	0.074	11kV Feeder I	GIS, Singhigaon s/s	Overcurrent on R, Y phase	Ip trip, O/C trip, I>> Trip,General trip,	Pole washed away by flood at Gorsangdara (2 spot conductor damaged)	Tripped	IL1=0.73kA, IL2=0.32kA, IL3=0.01kA
(E)66/33/11 kV Phuentsholing Substation													
1	06.08.2021	14.55	06.08.2021	15.02	0	0.16	66kV Plung-Gomtu feeder	66kV Plung-Gomtu feeder		DGTN OPTD, 186&86	Line	Tripped on Fault	66kV Plung-Gomtu feeder tripped at our end and 66kV Chukha-Plung from their end causing black out. At 14.59hrs 66kV Chukha-Plung feeder normalized from chukha end and at 15.02hrs test charged after getting clearance from BPSO and stood normal.
2			06.08.2022	14.40	24	idle	66kV Malbase-Plung feeder	66kV Malbase-Plung feeder					At 14.40hrs charged 66kV Malbase-Plung feeder after getting approval from BPSO with charging code 1414 which was under idle charged condition. At 15.02hrs opened CB of 66kV Malbase-Plung feeder with opening code 0193 from BPSO after normalising 66kV Chukha-Plung and 66kV Plung-Gomtu feeder.
3			06.08.2022	21.35	21	idle	66kV Malbase-Plung feeder	66kV Malbase-Plung feeder					At 21.35hrs charged 66kV Malbase-Plung feeder with charging code 1410 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-Plung feeder with opening code 0193 from BPSO after normalising 66kV Chukha-Plung and 66kV Plung-Gomtu feeder.
4	07.08.2021	11.03			69(08)	0.75	66kV Malbase-Plung feeder	66kV Malbase-Plung feeder					At 11.03hrs opened CB of 66kV Malbase-Plung 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-Phuentsholing line	Black out	Bad weather		Line segment		Charged from Chukha end.
(F) 66/33/11 kV Gomtu Substation													
1	06.08.2021	14.38	06.08.2021	14.39	0	0.42	66kV Dhamdum/P/Ling	Gomtu	Grid Fail	Nil	Line Segment		Both Supply failed from Dhamdum and Phuentsholing.
2	06.08.2021	21.24	07.08.2021	10.56	13	0.42	66kV P/Ling	Nil	R 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,O/C16-T] TRIP-R,Y,B Ø fault	Gomtu line	N/A	Relay indication. [67 -Direction over current,/Earth fault relay] IL1 = 1.7 kA, IL2 =1.7 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	66kV 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 clamping code 1412 breaker towards closed towards Dochula and line stand thereafter.
2	11.08.2021	01:27hrs	11.08.2021	01:35hrs	0	19.179	66kV 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 Basochu and line stand thereafter.
3	11.08.2021	01:43hrs	11.08.2021	03:57hrs	2	22.159	66kV 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 Basochu.
4	14.08.2021	03:40hrs	14.08.2021	04:10hrs	0	19.240	66kV 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 end closed the breaker with the closing code from BPSO at 04:10hrs and line stand thereafter.
	66kV LSA- Gawalthang-Basochu feeder												
1	11.08.2021	01:27hrs	11.08.2021	01:35hrs	0	19.179	66kV 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	22.159	66kV 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.
	(B) 66/11kV Ilas Substation												
1	08.08.2021	4:01	08.08.2021	4:22	2hrs	-0.5	All the feeders	due to Distribang feeder	E/F & O/C	Tangts, Ilas	Incomer tripped along with all the outgoing feeders, due to the fault on the Distribang feeder. Incomer supply was charged from Punglhena end with the closing code 1427 from BPSO but failed to stand. so, after isolating the faulty feeder (Distribang) 66kV incomer was once again was charged vide closing code 1429 and it was found normal. The faulty feeder was kept isolated so to carry out line patrolling by ESD, Ilas.		
	(I) 220kV Substation Semtokha												
1	11.08.2021	01:28hrs	11.08.2021	01:40hrs		-05.770	220kV Semtokha-Rurichu Line	220kV Semtokha-Rurichu Line	Over Voltage	Main-1 Dist. Optd, Over Voltage trip		Temporary	
2	10.08.2021	10:14hrs	10.08.2021	10:19hrs		36.879	220/66kV 50/63MVA-2	Semtokha and Dochula Substation	Over Current (Tripped while opening Dochula to Ishrou line)	Over Current and Inst. Over current Optd.		Temporary	
3	11.08.2021	01:50hrs	11.08.2021	03:51hrs		37.820	220/66kV 50/63MVA-2	Semtokha and Dochula Substation	Over Current (Tripped while opening Dochula to Ishrou line)	Over Current and Inst. Over current Optd.		Temporary	
4	11.08.2021	01:28hrs	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	1.60	1.710		Semtokha Substation	Hand trip to extend station supply from 11kV/A-1				
6	11.08.2021	08:59hrs	11.08.2021	12:50hrs	4.00	42.000	66kV Semtokha-Dochula line	66kV Dochula Substation	Shutdown taken by Mr. Kinley Wangchuk, Project Manager to make jumper connection on tower location 11and jumper opening at tower 12.			Transmt	No customer affected
	(Feb 33/11kV Punglhena substation												
1	07.08.2021	15:12	07.08.2021	15:14	0	0.00	66kV OG-Ilas		Tripped on O/C	Distance Relay		Transient	
2	08.08.2021	4:02	08.08.2021	6:23	2	0.53	66kV OG-Ilas		Tripped on O/C & E/F	Distance Relay		Long	Dwgdt Test charging in coordination with BPSO,the line couldnot stand. Lastly it was found out that Ilas end use of 11kV bb had a problem where 66 Line was charged after isolating 11kV feeder.

September 2021

Sl No.	Date of Tripping	Time of outages	Date of Normalisation	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	4:30	02.09.2021	4:45	0	5.75	220kV Malbase-Dumdum feeder	Malbase S/S and Dumdum	OC trip on Y phase-Earth fault	main 1 trip,Zone 1 trip,86 optd	30.8 km	Overcurrent fault	[illegible]
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 p/ling line		[illegible]
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 50trip	66kV p/ling line		[illegible]
4	06.09.2021	15:09	06.09.2021	15:29	0	-	66kV bus coupler	Malbase Substation	Trip due to fault in 66kV p/ling feeder	86 optd, IEF50N trip	66kV p/ling line		[illegible]
5	12.09.2021	0:20	12.09.2021	14:30	14	-	66kV p/ling feeder		O/C &E/F	86 optd,DS1 trip	66kV p/ling line		[illegible]
6	12.09.2021	0:20	12.09.2021	14:04	13	-	66kV bus coupler	Malbase Substation	O/C &E/F	IOC 50trip,IEF50N trip,general trip	66kV p/ling line		[illegible]
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		[illegible]
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		[illegible]
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		[illegible]
10	13.09.2021	13:02	13.09.2021	13:20	0	44	220kV Birpara feeder	Malbase Substation	O/C on B Phase	86 optd, AR lockout alert, zone1 trip	fault location =24.46km		[illegible]
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		[illegible]
12	16.09.2021	13:36	16.09.2021	13:44	0	24	50/63MVA transformer III	Malbase Substation					[illegible]
13	17.09.2021	18:56	17.09.2021	20:03	1	-5	400kV Siliguri feeder	Malbase Substation	O/C &E/F	Main 1 trip,zone1 trip	44.8 km		[illegible]
(B) 220/66/11 kV Singhigaon Substation													
1	02.09.2021	4:08	02.09.2021	4:58	29	0.4	Singye- samtse feeder	Singyegaon	Overcurrent	86 opted	220kV samtse line	O/C tripped	[illegible]
2	16.09.2021	13:35	16.06.2021	16:14		1.16	Singye- samtse feeder	Singyegaon	Overcurrent	86 opted	220kV samtse line	O/C tripped	[illegible]
(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	14:58	14	idle	66kV Malbase-Pling feeder	66kV Malbase-Pling feeder					At 14:58hrs 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 operating code [illegible] from BPSO and feeder kept under idle condition.
(D) 66/33/11 kV Gedu Substation													
1	21.09.2021	14:47	21.09.2021	14:58	0	1.00	66kV Chukha-Phuntsholing line	Black out			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	-7.307	66kV Dhamdum	Nil	General tripped		Dhamdum	General	Tost changed 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	Tost changed 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	Tost changed from Dhamdum and supply stood normal

Tripping Report for the month of SEPTEMBER 2021

Sl. No.	Date of Tripping	Time of outages	Date of Normalisation	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 Chumdo switching station												
1	28.09.2021	1105hrs	28.09.2021	1110hrs		4.44MW	66kV Jemina Feeder	Fed from 66kV Chukha feeder	Transient fault	[illegible]	chumdo	Trip	
2	29.09.2021	1400hrs	29.09.2021	1410hrs		[illegible]	66kV Chukha Feeder	Paro, Pangbesa, Jemina	Grid failure	No operation at chumdo end	Generation end	Grid failure	
	(B) 66/33kV Watsa Substation												
1	20/9/2021	14:17hrs	20/9/2021	14:42hrs		25MW	66kV MW	Fdr. I and Fdr. II	O/C, OCH & E/F	O/C, OCH & E/F	Fdr. II Chapcha		Tree fallen on 33kV line at Zimla
2	29/9/2021	13:30hrs	29/9/2021	13:43hrs		29MW	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		29MW	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	3:05	1	2.83	20MVA Transformer II	All the 11kV 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 and was replaced with new one.
3	9/8/2021	11:27	9/8/2021	11:37	0	-16.61	66kV Semtokha-Olakha line	All the 11kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end.
4	9/8/2021	11:27	9/8/2021	11:37	0	4.32	66kV Olakha - Changlidgkha line	All the 11kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end. The 66kV incomer was charged after information received from RPSO
5	9/12/2021	12:10	9/12/2021	12:17	0	3.46	66kV Olakha - Changlidgkha line	All the 11kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end.The 66kV incomer was charged after information received from RPSO
6	9/12/2021	12:10	9/12/2021	12:17	0	-18.9	66kV Semtokha-Olakha line	All the 11kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end.
7	9/29/2021	13:04	9/29/2021	13:14	0	-9.65	66kV Semtokha-Olakha line	All the 11kV Outgoing feeders was effected due to failure of Basochhi line	Supply failed from the Basochhi	Nil	Line Segments	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end.
8	9/29/2021	13:58	9/29/2021	14:23	0	0	66kV Olakha - Changlidgkha line	All the 11kV Outgoing feeders was effected due to Grid failure	Grid fail	Nil	Line segment	Grid fail	As confirmed by the shift duty of Semtokha Substation, the 66kV Supply was tripped from Kiruchhu end.The 66kV incomer was charged after information received from RPSO
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	16.24hrs	0	29.950	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 one end and supply
	66kV LSA - Basochu feeder												
1	29.09.2021	13:59hrs	29.09.2021	16.24hrs	0	-24.920	66kV LSA-Basochi	Lobeysa Substation	Grid fail	NA	NA	NA	66kV LSA -Dochula feeder grid fail at 13:59hrs without any relay or breakers operated at one end and supply
	(E) 66/33/11 kV Paro Substation												
1	15.09.2021	20.27	29.09.2021	20.32	0	7.41	66kV Chunzlo Line 3n	Black out at paro	Tripped from chunzlo end				
2	29.09.2021	13.38	29.09.2021	13.42	0	6.95	66kV Chunzlo Line 3n	Black out at paro	Tripped from chukha				
2	29.09.2021	14.00	29.09.2021	14.13	0	6.95	66kV Chunzlo Line 3n	Black out at paro again	Tripped from chukha				
	(F) 66/33/11kV Jemina Substation												
1	12.09.2021	12.08	12.09.2021	12.19	0	0.60 Chunzlo & - 2.11 Changedigkha	66 kV lines, Chunzlo & Changedigkha	Blackout	Earth Fault	Earth fault & Arm evolver lockout	line segment		Ia: 15.07 A, Ib: 22.62 A, Ic: 85.05 A, In measured: 63.10 A, Vab: 64.53 V, Vcb: 65.24 V & Y for Chunzlo & Ib: 11.17 A, Ic: 74.6 A & In measured: 61.34 A, Vab: 66.05 V, Vbc: 64.68 V & Vca: 65.54 V for Changedigkha
2	28.09.2021	13:05	28.09.2021	13:16	0	2.91 C/digkha & - 6.53 Chunzlo	66 kV lines, Chunzlo & Changedigkha	Blackout	Supply failed from Chunzlo	Nil	Chunzlo Switching station end, shows general trip		-
3	29.09.2021	13:37	29.09.2021	13:41	0	1.15 C/digkha & - 4.62 Chunzlo	66 kV lines, Chunzlo & Changedigkha	Blackout	Distance protection operated at Changedigkha end	Nil	Changedigkha end, Distance relay operated.		-
4	29.09.2021	13:59	29.09.2021	14.17	0	1.15 C/digkha & - 4.62 Chunzlo	66 kV lines, Chunzlo & Changedigkha	Blackout	Supply failed from Rurichu, at that time Sem.- Chu under Shutdown.	Nil	Source		-

	(G) 66/33/11kV Dechencholing substation											
1	08.09.2021	11:24Hrs	08.09.2021	11:37hrs	0		66kV I/C Semtokha	Whole life	Supply failed from source			
2	12.09.2021	12:08Hrs	12.09.2021	12:23hrs	0		66kV I/C Semtokha	Whole life	Supply failed from source.			
3	13.09.2021	14:19Hrs	13.09.2021	14:27hrs	0		66kV I/C Semtokha	Whole life	Supply failed from source			
4	28.09.2021	11:08Hrs	28.09.2021	11:17hrs	0		66kV I/C Semtokha	Whole life	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 life	Supply failed from source. Tripped from Basacha end.			
					66kV side Shut down							
1	01.09.2021	11:00Hrs	01.09.2021	16:00Hrs	5hrs	...	10MVA T-I	supply feed from 10MVA T-II	HV side CT Hissing sound inspection.			
2	02.09.2021	08:32hrs	02.09.2021	08:55Hrs	0	...	11KV O/G-III	Only O/G-III	Shut down taken by ESO-Official for phase sequence correction.			
3	11.09.2021	23:24Hrs	12.09.2021	23:34Hrs	2hrs	.....	10MVA T-I	supply feed from 10MVA T-II	Operator observed hot spot on HV side of 10MVA -T(-I. SF6 breaker -B phase trembled, so to protect to our equipment we requested Taba end to reduce the load, so they permitted us to hand tripped the 11KV O/G -I. (			
4	15.09.2021	11:13Hrs	15.09.2021	11:42hrs	0hrs	.....	10MVA T-I	supply feed from 10MVA T-II	Taba-II) Same night our srtc team had rectified the hotspot portion and charged 10MVA T-I and charged Taba O/G-I and informed them to increase the load as normal. Same night maintenance Engineer had shutted. Bus Shut down issued to SMD team to arrest the Hot spot at LV side 10MVA T-I VCB breaker terminal 'm Y phase.			
	(H) 66/11kV Bus Substation											
1	29.09.2021	14:00	29.09.2021	14:11	0hrs	-1.14	All the feeder	Due to tripping of 220kV Tsirang – Sgorelling line			Supply failed due to tripping of Sgorelling – Tsirang line. The same was normalized after extending the supply from 220kV Tsirang to BHP power plant.	
	(I) 220kV Substation Semtokha											
1	08.09.2021	11:27hrs	08.09.2021	11:37hrs		-17.766	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 – Dechelocha line	Dechela Substation	Broken Conductor	Dist/ Relay Oprtd, Busbar conductor		Transient
5	02.09.2021	04:04hrs	02.09.2021	04:14hrs	0.00	59.510	66kV Semtokha – Dechelocha line	Dechela Substation	Fault Loop= L1-L2	Dist/ Relay Oprtd,		Transient
6	09.09.2021	20:47hrs	09.09.2021	21:24hrs	2.00	64.575	66kV Semtokha – Dechelocha line	Dechela Substation	Bph Line Isolator current restored at	Dist/ Relay Oprtd,		Permanent
7	11.09.2021	19:28hrs	11.09.2021	19:36hrs	0.00	61.899	66kV Semtokha – Dechelocha line	Dechela Substation	Fault Loop= L1-L3	General trip, Rph trip	3.6	Transient
8	13.09.2021	13:18hrs	13.09.2021	13:28hrs	0.00	62.300	66kV Semtokha – Dechelocha line	Dechela Substation				Transient
9	14.09.2021	14:13hrs	14.09.2021	14:15hrs	0.00	62.840	66kV Semtokha – Dechelocha line	Dechela Substation	Fault Loop= L1-L2	Dist/ Relay Oprtd,	3.8	Transient
10	17.09.2021	14:14hrs	17.09.2021	14:16hrs	0.00		66kV Semtokha – Dechelocha line	Dechela Substation	Fault Loop= L1-L2	Dist/ Relay Oprtd,	0	Transient
11	21.09.2021	15:09hrs	21.09.2021	15:15hrs	0.00	64.050	66kV Semtokha – Dechelocha line	Dechela Substation	Fault Loop= L1-L2	Dist/ Relay Oprtd,	0	Transient
12	13.09.2021	14:18hrs	13.09.2021	14:27hrs	0.00	15.150	66kV Dechencholing – Tsirang line	Dechencholing Substation	Under Voltage trip	Dist/ Relay oprtd.		Transient
13	28.09.2021	13:04hrs	28.09.2021	13:04hrs	0.00	19.840	66kV Dechencholing – Tsirang line	Dechencholing Substation	Under Voltage trip	Grid failed		Transient
14	22.09.2021	11:09hrs	22.09.2021	12:53hrs	3.00	16.040	Dechencholing 40/50MVA Transformer	To attain the oil leakage on Yph Bushing				
	(J)66/33/11kV Pangbesa substation											
1	29.09.2021	13:18	29.09.2021	13:42	0	1.6	66kV Chumdo Line In	Black out at pasv	Tripped from chukha			
2	29.09.2021	14:00	29.09.2021	14:13	0	1.6	66kV Chumdo Line In	Black out at pasv again	Tripped from chukha			
	(K) 66/33kV Changlingbo Substation											
1	29.09.2021	11:37hrs	29.09.2021	13:41hrs			66kV Changlingbo-Jemina Line	66kV Changlingbo-Jemina Line	Grid Failed	Dist. Relay oprtd, R/YBph Trip, Power Swing		Transient
2	08.09.2021	11:27hrs	08.09.2021	11:42hrs			66kV Changlingbo-Olakha Line	Changlingbo Substation	Grid Failed	Dist. Relay oprtd, Bph Trip, Power Swing		Transient

	(L) 66/33kV Dungi Substation												
1	08.09.2021	1125 hrs	08.09.2021	1136 hrs	0	-0.27	66 kV Incoming line	66 kV Thimphu-Gasa Line, Dungi 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	66 kV Incoming line	66 kV Thimphu-Gasa Line, Dungi 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	66 kV Incoming line	66 kV Thimphu-Gasa Line, Dungi 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	66 kV Incoming line	66 kV Thimphu-Gasa Line, Dungi Substation & all outgoing Feeders	Trip	NA	NA		Line Trip from Semtokha Substation, i.e. 220 kV Basochu Feeder Trip at Basochu end
5	29.09.2021	1400 hrs	29.09.2021	1418 hrs	0	-0.83	66 kV Incoming line	66 kV Thimphu-Gasa Line, Dungi Substation & all outgoing Feeders	Trip	NA	NA		Western Grid Blackout due to 220 kV Tsirang-Jigmeling Line
6	30.09.2021	1727 hrs	30.09.2021	1732 hrs	0	0.22 & 0.18	Power Transformer	Incomer II & all outgoing feeders	Trip	50/51 & 86 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 Chumdo switching													
										Nil				
	(B) 66/33kV Wainu Substation													
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	(C) 66/33kV Olakha Substation													
1	10/1/2021	4:03	10/1/2021	4:35	0	32	0	20MVA Transformer II	All the Outgoing feeders got affected 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	10/1/2021	3:54	10/1/2021	4:35	0	39	2.8	20MVA Transformer I	All the Outgoing feeders got affected 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	10/6/2021	12.37	10/6/2021	12.40	0	3	4.18	20MVA Transformer II	All the Outgoing feeders got affected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	DIR. Over current and Earth fault prote relay 67 optd.1 General trip 2 UV operated. Indication: Bus under Voltage and Over current and earth fault operated.	Line Segments	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 affected, 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 66V 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 stood normal.
5	10/6/2021	14.24	10/6/2021	14.25	0	1	3.51	20MVA Transformer II	All the Outgoing feeders got affected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	DIR. Over current and Earth fault prote relay 67 optd.1 General trip 2 UV operated. Indication: Bus under Voltage and Over current and earth fault operated.	Line Segments	Transient Fault	Transformer was tripped while charging of 33kV incomer II. After isolating all the feeders, Changed the Transformer and stand normal.
7	10/8/2021	12.22	10/8/2021	12.36		14	1.66	66kV Olakha-Jemina line	All the 33kV Outgoing line was affected.	To Change the Tap Position on off load Condition at Chhukha end	Nil	At Chukha end	Shutdown	The supply was hand tripped from Chhukha 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 affected, as both the 20MVA Transformer was tripped.	Transformer was tripped while charging of 33kV incomer II	Under Voltages Operated along with 86 Tripping relay	Line Segments	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 affected, as both the 20MVA Transformer was tripped.	Spring discharged due to tripping of 33kV Incomer I and II	Only 86 Tripping Relay Operated	Substation	Breaker Spring discharged.	Due to repeated tripping of the 33kV incomer I & II, the 66V 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 stood normal.

10	10/8/2021	13:34	10/8/2021	13:45	0	29	1	11KV DPH I Feeders V	All the 11KV outgoing feeders effected	Due to Change over the supply from Olakha line	Over Current and Earth Fault along with Master relay Trip. Indication 1& 5	Substation	Voltage problems	Due to Voltage hazard, the feeders was tripped, Reset the relays and test charge the feeders and stood normal.
11	10/8/2021	14:24	10/8/2021	14:27	0	3	3.38	20MVA Transformer I	All the Outgoing feeders got effected, as both the 20MVA Transformer was tripped	Transformer was tripped while charging of 11KV incomer II	Only 86 Tripping Relay Operated	Line fluctuation	Transient Fault	The Transformer was Tripped while charging of 11KV Incomer II, Reset the relay and test charged. Transformer held normal.
12	########	7:16	########	7:33		17	4.36	20MVA Transformer I	All the Outgoing feeders got effected as both the transformer was tripped.	Due to Under Voltage	Indication: Bus under voltage optd. O/C and E/F along with tripping relay 86	Line fluctuation	Transient Fault	Reset the relay and test charged. Transformer held normal.
13	########	10:42	########	11:11		29	4.08	20MVA Transformer I	All the Outgoing feeders got effected as both the transformer was tripped.	Due to Under Voltage	Indication: Bus under voltage optd. O/C and E/F along with tripping relay 86.	Line fluctuation	Transient Fault	Reset the relay and test charged. Transformer held 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 fluctuation	Hand Tripped	The Transformer was tripped after instruction from BPSO for testing of voltage. charged the transformer with charging code 1447 from BPSO and held normal.
15	########	12:06	########	12:09		3	3.48	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 voltages	20MVA II hand tripped after getting clearance from BPSO to increase the tape position from 9 to 11 with opening code no.0376 Charged the transformer with closing code no.1008 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 voltages	20MVA II hand tripped after getting order from BPSO to decrease the tape position from 11 to 9 with opening code no.0389 and charged the transformer with closing code no.1702 and stand normal.
	(D) 66/33/11kV Lobeysa Substation													
1	02.10.2021	06:09hrs	02.10.2021	06:15hrs	0	22	24.620	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 06:15hrs with the charging code 147x
2	08.10.2021	20:52hrs	08.10.2021	20:58hrs	0	6	25.000	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 1476 and DR submitted to BPSO & CAPD
3	08.10.2021	21:02hrs	08.10.2021	21:11hrs	0	9	22.000	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 1477 and DR submitted to BPSO & CAPD
4	08.10.2021	21:13hrs	08.10.2021	21:19hrs	0	12	22.000	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 1479 and DR submitted to BPSO & CAPD
6	01.10.2021	03:54hrs	01.10.2021	03:58hrs	0	4	-23.200	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 for Dochula at time of tripping LSA-Basochu feeder.
	(E) 66/33/11 kV [illegible] Substation													
1	08.10-2021	12.24Hrs	08.10-2021	12.12Hrs	0	8	5.47	66kV Chumdo Line In	In outgoings	Tripped from chukha	-			
	(F) 66/33/11kV Jemina Substation													
1	08.10.2021	12:23	08.10.2021	12:27	0	4	09.72 Chumdo & - 11.70 Chumdo	66 kV Jemina, Chumdo & Changedaphu	Blackout	Supply failed from Chukha	-	line segment		Supply failed from the Source
1	02.10.2021	06:48hrs	02.10.2021	06:54hrs		6.00	-72.120	220kV Semtokha-Rurichu Line	220kV Semtokha-Rurichu Line and Semtokha [illegible]		Main-1 Optd, RTB Trip		Transient	
2	03.10.2021	03:55hrs	03.10.2021	03:58hrs		3.00	-45.100	220kV Semtokha-Rurichu Line	220kV Semtokha-Rurichu Line and Semtokha [illegible]		Main-1 Optd, RTB Trip		Transient	
3	06.10.2021	21:16hrs	06.10.2021	21:32hrs		16.00	10.210	40/50MVA, [illegible]	Semtokha Substation and Dechencholing Substation	W/T gauge of 40/50MVA fell off from the structure	LV Backup optd, Rph Trip, 2-trip	40/50MVA transformer at Semtokha SS	Temporary	
4	19.10.2021	22:43hrs	19.10.2021	22:48hrs		5.00	61.725	66kV Semtokha-Dechula Line	Dochula Substation	Fault Loop= L1-L2	Dist. Relay Optd., Ground Trip	0.00km	Transient	
5	26.10.2021	10:03hrs	26.10.2021	12:55hrs	3.00	52.00	41.260	220kV Semtokha-Rurichu Line	220kV Semtokha- Rurichu Line	Shutdown taken by Karma Wangda (Incharge [illegible])				
6	26.10.2021	09:15hrs	26.10.2021	15:20hrs	414.00	6.00	17.710	66kV Semtokha-Olakha Line, 66kV [illegible]	66kV Bus-C, 50MVA-T and 20MVA [illegible]	Shutdown taken by [illegible] Olakha for reconductoring line with HTLS				
7	28.10.2021	10:27hrs	28.10.2021	16:00hrs	5.00	39.00	31.320	66kV Semtokha-Dechula Line	66kV Dochula Substation	Temporary jumper connection at tower no.31				
8	28.10.2021	00:33hrs	28.10.2021	05:05hrs	1.00	32.00	17.400	66kV Semtokha-Dechencholing Line	Dechencholing ss and Damji [illegible]	Shutdown taken by SSBU Semtokha for [illegible]				
9	28.10.2021	00:33hrs	28.10.2021	01:27hrs	1.00	27.00	12.600	66kV Semtokha-Dechencholing Line	Dechencholing ss and Damji [illegible]	Shutdown taken by [illegible] Semtokha to attend hotspot on Line isolator				

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 Malbase Substation 66kV & Above													
1	15.11.2021	16:10	15.11.2021	16:16	0	33	200 MVA ICT	-	Tripped	PRD OPERATED,PRD tripped,86 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 Spare Phase ICT.
2	16.11.2021	9:49	16.11.2021	10:01	0	44	200 MVA ICT	-	Tripped	OIL Surge relay optd 86 optd, DSR 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 Spare Phase ICT.
(B) 66/33kV Watsa Substation													
1	10/11/2021	8:42hrs	10/11/2021	8:53hrs		4.93MW	66KV SF6 breaker	T/F, I and T/F, II	O/C, OCR, EF & EFD	O/C, OCR, EF & EFD relay operated	66KV SF6 breaker charged after resetting relays and supply found normal but the 11KV Breaker got mechanical problem so it could not hold so kept the stator MCB off after consulting with Maintenance head.	Tripped	
(C) 66/33kV Dhalia Substation													
1	11/25/2021	18:16	11/25/2021	18:50	0	14.86	66/33kV 20MVA Transformer II	All the Outgoing and Incomer feeders got affected as the Transformer I & II was tripped.	Due to Over Current and earth Fault	Over current and earth fault along with 86 trip relay	Dhalia 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	14.86	66/33kV 20MVA Transformer II	All the Outgoing and Incomer feeders got affected as the Transformer I & II was tripped.	Due to Over Current and earth Fault	Over current and earth fault along with 86 trip relay	Dhalia Substation	Transient	Reset the relays and charged the transformer individually and found normal
3	11/26/2021	20:50	11/26/2021	21:22	0	35.76	66kV Dhalia-Samdrup Line	Dhalia substation	Grid failed	Nil	Line Segment	Over Function	As per the information received from the Samdrup and the supply was fail from source as the 220kV Samdrup to Rurichu, the insulation disc was punctured at line.
(D) 66/33/11kV Lobeysa Substation													
1	23.11.2021	11:43hrs	23.11.2021	11:53hrs	0	17.170	66kV LSA-Dzedrala	NA	NA	86 relay operated	NA	NA	66kV LSA -Dzedrala tripped at 11:43 hrs, operating breaker open at one
2	26.11.2021	20:59hrs	26.11.2021	21:39hrs	0	25.200	66kV LSA-Dzedrala	NA	NA	47 relay operated	NA	NA	66kV LSA -Dzedrala tripped at 20:59 hrs, operating breaker open
3	26.11.2021	23:02hrs	27.11.2021	11:20hrs	12	-6.305	66kV LSA-Dzedrala	NA	NA	NA	NA	NA	66kV LSA -Dzedrala Hand,code 0x27 tripped at 23:02 hrs as per
4	26.11.2021	20:19hrs	26.11.2021	22:19hrs	1	-23.200	66kV LSA-Basochu	NA	NA	86relay operated	NA	NA	66kV LSA -Basochu feeder tripped at 20:19hrs, operating breaker open
(E) 66/33/11kV Bodmarikhog substation													
1	26.11.2021	20:48hrs	26.11.2021	20:55hrs	0		66kV samdrup Incomer	whole sub	Supply failed from source				
2	26.11.2021	20:57hrs	26.11.2021	21:20hrs	0		66kV samdrup Incomer	whole sub	Supply failed from source				
(F) 220kV Substation Samdrup													
1	26.11.2021	20:50hrs	26.11.2021	21:22hrs		-60.480	220kV Samdrup-Dhalia Line	Samdrup Substation	Dhalia end breaker opened during the test charge of 220kV Samdrup-Rurichu Line			Transient	
2	26.11.2021	20:42hrs	27.11.2021	18:44hrs	22.05	-60.500	220kV Samdrup-Rurichu Line	220kV Samdrup-Rurichu Line and Samdrup Substation	I.I.-E (Insulator) De-Cap at location tower SN-41	Zone-1, R/Y/Bph Trip, Fault Loop-I.I.-E	7.1km	Permanent	
(G) 66/33kV Changjiphu Substation													
1	26.11.2021	20:42hrs	26.11.2021	22:00hrs	1	-4.75	66kV Changjiphu-Dhalia line	66kV Changjiphu-Dhalia line	Grid Failed	Distance relay optd, Rph trip		Transient	
(L) 66/33kV Dungi Substation													
1	04.11.2021	0220 hrs	04.11.2021	0227 hrs	0	0.17	Transformer 2	Dungi Substation & all outgoing Feeders	Trip	EF/OT	NA		Tripped due to earth fault on Panbang Feeder 002 (R Phase Trip)
2	04.11.2021	1710 hrs	04.11.2021	1720 hrs	0	0.1	Transformer 2	Dungi Substation & all outgoing Feeders	Trip	50 N	NA		Tripped due to earth fault on Panbang Feeder 002 (R Phase Trip)
6	05.11.2021	2212 hrs	06.11.2021	0000 hrs	1	0	Transformer 1	NA	Trip	NA	NA		Transformer 1 which was kept under idle charge was trip due BUCH Trip
7	06.11.2021	1103 hrs	06.11.2021	1105 hrs	0	0.17	Transformer 2	Dungi Substation & all outgoing Feeders	Trip	50 N & B Phase Trip	NA		Tripped due to earth fault on Gaza Feeder
8	06.11.2021	1650 hrs	06.11.2021	1700 hrs	0	0	Transformer 1	NA	Trip	86-OPTD	NA		Idle charge Trafo 1 Ref 63T BUCH Trip
9	06.11.2021	2052 hrs	06.11.2021	2059 hrs	0	0	Transformer 1	NA	Trip	86-OPTD	NA		Idle charge Trafo 1 Ref 63T 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	1444 hrs	0	0.16	Transformer 1	Dungi Substation & all outgoing Feeders	NA	86-OPTD	NA		Tripped due to over current on Panbang Feeder
11	07.11.2021	1738 hrs	07.11.2021	1742 hrs	0	0	Transformer 1	Dungi Substation & all outgoing Feeders	NA	86-OPTD	NA		BUCH Trip
12	07.11.2021	2057 hrs	07.11.2021	2100 hrs	0	0	Transformer 1	Dungi Substation & all outgoing Feeders	NA	86-OPTD	NA		BUCH Trip
13	07.11.2021	0908 hrs	08.11.2021	1108 hrs	26	0.08	Transformer 2	NA	Idle	NA	NA		Transformer 2 (5 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	0100 hrs	46	0.19	Transformer 1	NA	Trip	86-OPTD	NA		Idle charge Trafo 1 Ref 63T BUCH Trip, after rectification idle charge on 12.11.2021 at 0300 hrs and charged on LV side with full at 0905 hrs
17	26.11.2021	2040 hrs	26.11.2021	2045 hrs	0	-0.14	66 kV Incoming Line	Dungi Substation & all outgoing Feeders	Trip	NA	NA		Trip due to 66 kV Incoming Line due to 220 kV Grid Failure
18	26.11.2021	2050 hrs	26.11.2021	2127 hrs	0	-0.18	66 kV Incoming Line	Dungi Substation & all outgoing Feeders	Trip	NA	NA		Trip due to 66 kV Incoming Line due to 220 kV Grid Failure
(M) 66/11kV Deothang Substation													
1	26.11.2021	20:50hrs	21:13hrs				substation black out	All 11kV feeders	trip from source substation	86 relay			11kV feeders

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 (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 400kV & Above													
1	01.12.2021	12:23	03.12.2021	13:31	49		200 MVA ICT	-	Tripped	-	200 MVA ICT	Tripped	[illegible]
2	01.12.2021	12:24	02.12.2021	18:01	5		400kV TAL-MAL FDR III	-	Tripped	-	400kV TAL-MAL FDR III	Tripped	[illegible]
3	08.12.2021	13:09	08.12.2021	13:19	0	-190	400kV TAL-MAL FDR III	-	Tripped	[illegible]	[illegible]	Tripped	[illegible]
[illegible]													
1	25.12.2021	14:57	25.12.2021	15:06	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Line	Tripped on Fault	[illegible]

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
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Tripped	[illegible]
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA	NA	[illegible]	NA	NA	[illegible]
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
2	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]				
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]												
1	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
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1	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]			[illegible]