

TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja
From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT OF FRIDAY 06/07/2018

FOR: EVENTS OF THURSDAY 05/07/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,330	21:30	06/07/2018
GENERATION CAPABILITY	7402.5	-00-	-00-
UNITS ON BARK CAPABILITY AT PEAK	5043	-00-	-00-
PEAK GENERATION	4628.8	-00-	-00-
LOWEST GENERATION	3095.4	13:00	05/07/2018
8-HOURLY DURATION PEAK	3644.8	0100-0800	-00-
	3496.7	0900-1600	-00-
	4628.8	1700-2400	-00-
PEAK GENERATION TO DATE	5222.3	21:00	18/12/2017
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	08:00	14/04/2014
MAXIMUM ENERGY GENERATED (MWH) TO DATE	109,372.01	0000-2400	02/02/2016

1.2 CRITICAL VOLTAGE

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	330		
STATUTORY LIMITS	280.5 - 346.6		
HIGHEST VOLTAGE FOR THE DAY	358	Omotosho T/S	08:00
LOWEST VOLTAGE FOR THE DAY	304	Gombe T/S	09:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.03	02:57
LOWEST FREQUENCY	50.05	21:30

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th June, 2018		No. of days since last total collapse: 27												
Date of last partial collapse: 12 th April, 2018		No. of days since last partial collapse: 80												
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 240												
		Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total
2010	Total	---	3	1	--	3	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	2	--	6
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16
	Partial	--	--	2	3	--	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	22
	Partial	--	--	--	--	--	--	--	--	2	--	--	--	2
2014	Total	2			2	0	3	1	0	0	1	0	0	9
	Partial			0	0	1	0	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	0	0	0	1	0	6
	Partial	--	--	1	0	2	0	0	0	0	1	0	0	4
2016	Total	--	--	2	3	6	5	0	0	1	1	2	2	22
	Partial	--	--	1	0	1	3	1	0	0	0	0	0	6
2017	Total	5	3	0	3	1	1	0	0	1	1			15
	Partial	1	0	1	0	0	0	1	0	3	3			9
2018	Total	5	1	0	0	0	1							7
	Partial	0	0	0	1	0								1

1.5 BREAKDOWN OF PEAK & OFF PEAK GENERATION (NATIONAL PEAK & OFF PEAK)

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	199	145
2 JEBBA	HYDRO	248	67
3 SHIRORO	HYDRO	386	255
4 EGBIN ST2 - 5	STEAM	394	330
5 SAPELE	STEAM	49	48
6 DELTA	GAS	599	364
7 AFAM IV-V	GAS	75	62
8 GEREGU GAS	GAS	291	93
9 OMOTOSHO GAS	GAS	171.8	126.7
10 OLORUNSOGO GAS	GAS	162	132.6
11 GEREGU NIPP	GAS	125	125
12 SAPELE NIPP	GAS	185	84.8
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	218.9	201.6
16 ODUKPAI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	109.5	84.5
18 OKPAI	GAS	274	240
19 AFAM VI	GAS	143	128
20 IBOM POWER	GAS	103.4	80.9
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	65.2	57.5
24 TRANS AMADI	GAS	46	45.3
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	444	250
27 EGBIN ST6	(GAS)	181	160
28 PARAS ENERGY	(GAS)	71	0
29 GBARAIN NIPP	GAS	88	14.5
TOTAL		4628.8	3095.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:		ENERGY GENERATED		ENERGY SENT OUT	
STATION	TURBINE	MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	3460.00	144.17	3443.70	143.49
2 JEBBA	HYDRO	3547.00	147.79	3527.44	146.98
3 SHIRORO	HYDRO	7606.00	316.92	7578.96	315.79
4 EGBIN ST2 - 5	STEAM	8558.00	356.63	8136.60	339.03
5 SAPELE	STEAM	1045.50	43.56	998.30	41.60
6 DELTA	GAS	12049.52	502.06	11862.60	494.28
7 AFAM IV-V	GAS	1824.00	76.00	1819.17	75.80
8 GEREGU GAS	GAS	3255.60	135.65	3230.91	134.62
9 OMOTOSHO GAS	GAS	3261.00	135.88	3229.30	134.55
10 OLORUNSOGO GAS	GAS	3436.51	143.19	3408.17	142.01
11 GEREGU NIPP	GAS	2741.38	114.22	2728.04	113.67
12 SAPELE NIPP	GAS	3197.43	133.23	3174.00	132.25
13 ALAOJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	4564.40	190.18	4526.10	188.59
16 ODUKPAI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2140.00	89.17	2125.19	88.55
18 OKPAI	GAS	5343.00	222.63	5269.70	219.57
19 AFAM VI	GAS	3083.71	128.49	3005.39	125.22
20 IBOM	GAS	1880.63	78.36	1872.00	78.00
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	7245.75	301.91	7219.30	300.80
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1233.60	51.40	1197.64	49.90
25 TRANS AMADI	GAS	1061.80	44.24	1038.30	43.26
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	3807.00	158.63	3601.90	150.08
28 PARAS ENERGY	GAS	1605.60	66.90	1597.80	66.58
29 GBARAIN NIPP	GAS	1755.50	73.15	1738.00	72.42
TOTAL		87,703.93	3,654.33	86,328.51	3,597.02

1.7A GENERATION POSITION AT 06:00HRS OF FRIDAY 06/07/2018

	STATIONS	NO OF INSTALLED UNITS	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS (MW)	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 11 & 12 3	340	195	1G5, 11 & 12 3	157	97	1G6 - Out on maintenance. 1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 1G9 - Out due to burnt 7.5MVA 33/0.415kV & 183.6MVA 16/330kV station service transformer and generator transformer. 1G10 - Shut down due to thrust bearing temperature problem. Generation reduced due to low gross operating head.
	JEBBA HYDRO	6	2G1 - 5 5	475	400	2G1 1	85	85	2G2 - 5 - Shut down on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G 2 - 4 3	440	375	411G2 - 4 3	375	271	411G1 - Out due to synchronization problem. 411G2 & 4 - Generation reduced on frequency management.
	EGBIN STEAM	5	ST2 & 4 2	440	440	ST2 & 4 2	396	365	ST1 - Tripped on low pressure air differential. ST3 - Out on high vibration since 19th June 2017. ST5 - Out due to boiler tube leakage.
	SAPELE (STEAM)	6	ST2 1	120	40	ST2 1	40	40	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9 - 13, 15, 16 & 18 - 20 11	635	635	GT7, 9 - 13, 15, 18 & 20 9	435	426	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT16 & 19 - Shut down on frequency management. GT17 - Tripped on bearing vibration than maximum.
	AFAM IV & V (GAS)	8	GT18 1	75	75	GT18 1	75	75	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Out due to technical issues. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 & 12 2	290	175	GT13 - Out due to gas constraint. Generation reduced on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2, 5 - 7 5	190	142.2	GT3, 4 & 8 - Out due to gas constraint. Generation reduced on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1 - 4 & 6 5	190	134.4	GT5, 7 & 8 - Out due to gas constraint. Generation reduced on frequency management.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT22 3	145	113	GT21 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	140.8	GT2 - Out due to high air inlet differential pressure. GT3 - Generation reduced due to filter problem. GT4 - Out due to high inlet differential. pressure.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT2 & 4 2	240	185	GT1 - Out on frequency management. GT3 - Out due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.
	IHOVBOR NIPP	4	GT1 & 3 2	225	225	GT3 1	80.4	80.4	GT1 - Out on frequency management. GT2 - Out on fault. GT3 - Manual adjustment to frequency. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	75.9	Available unit on bar.
	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	211	ST18 - Out due to water shortage. Generation reduced on frequency management.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	225	Generation reduced on frequency management.
IPP	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	108	GT11 & ST10 - Out due to gas constraint. GT12 - Shut down on frequency management.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	77.6	GT3 - Generation reduced due to line constraint.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	70.4	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. Generation reduced due to load flow on Alaoji/Afam 132kV line 2.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1, 2 & 4 3	60	45.9	GT3 - Out on fault. Generation reduced due to load flow on Alaoji/Afam 132kV line 2.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out on maintenance.
	SUB TOTAL	131	81	7695.5	7166.5	53	4201.9	3143.6	Frequency = 50.50Hz.

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 06/07/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	ST6		TOTAL (MWH)	REMARK	ST6		TOTAL (MWH)	REMARK	
		MAX LOAD (MW)	TIME (HRS)			MAX LOAD (MW)	TIME (HRS)			
EGBIN	1	1		220	160	1		160	Available unit on bar.	
		GT2 - 9				GT2 - 9				
PARAS ENERGY	8	8		69.4	69.4	8		69.4	Available units on bar.	
		8				8				
SUB TOTAL	9	9		289.4	229.4	9		229.4		
GRAND TOTAL	140	90		7984.9	7395.9	62		4,431.30	3,373.00	Frequency = 50.50Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 05/07/2018.
EGBIN ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK
OGBA	U-STEEL	On	10:00		24		Nil
	PTCEXPRESS	6	09:00		24		Nil
	SANKYO	Out	Out		Out		Tripped on O/C & E/F.
	FEEDER 8	8	20:00		24		Nil
IKORODU	PULK IT	3	05:00		24		Nil
	INDUSTRIAL	3	22:00		24		Nil
	SPINTEX	3	22:00		24		Nil
	DANGOTE	On	01:00		24		Nil
	LAND CRAFT	17	22:00		24		Nil
ALAUUSA	TR4 15MVA	3.7	11:00		24		Nil
	TR5 -15MVA	3.7	11:00		24		Nil
	ALAUUSA	8.4	08:00		24		Nil
M/LAND	PTC (MARYLAND)	9	18:00		24		Nil
TOTAL LOAD	64.8						

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB OF THURSDAY - 05/07/18

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	71.8	22:00	67.8	03:00	23	1675.7	Out due to tripping of Ikorodu/Shagamu 132kV line

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF THURSDAY - 05/07/2018

COMPANY NAME	VOL-TAGE LEVEL	CON-TRACTUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line	25	32	06:00	10	01:00	14	318	SUPPLY NOT INTERRUPTED
KAM STEEL		15.0							SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	6.9	19:00	3.3	08:00	24	126.8	SUPPLY NOT INTERRUPTED
KAM INTEGRATED	33kV feeder	15.0	3.3	09:00	1.1	07:00	24	56	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.2	23:00	0.7	01:00	24	27.5	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.2	01:00	0.1	07:00	0:00	4.5	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: FRIDAY 06/07/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	130.05	99.96	362.80
TAIL WATER ELEVATION (METERS)	101.98	72.90	271.00
GROSS OPERATING HEAD (METERS)	28.07	27.06	91.80
AVERAGE TURBINE DISCHARGE (M3/SEC)	516.00	637.00	398.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	516	637	398
COMPUTED INFLOW (M3/SEC)	763.00	834.00	866.00
STORAGE DIFFERENTIAL	247.00	197	468
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	129	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT THURSDAY 05/07/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	505.5	21:00	410.19	266.1	03:00
EKO	442.2	20:00	492.36	304.4	16:00
IKEJA	548.1	21:00	635.04	336.2	12:00

2.0 GAS POSITION: FRIDAY 05/07/2018

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCF/D)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EGBIN P/S	365	1100		525	575
DELTA (GAS)	536	915		435	480
OMOTOSHO GAS	142.2	336.8		190	146.8
OMOTOSHO NIPP	185	500		240	290
OLORUNSOGO (GAS)	134.4	336		190	146
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	140.8	500		225	275
SAPELE STEAM	40	720		40	680
AFAM IV-V	75	300		75	225
AFAM VI	108	650		150	500
GEREGU GAS	175	435		290	145
GEREGU NIPP	113	435		145	290
OKPAI (GAS/STEAM)	211	480		300	180
ALAJU NIPP	0	504		0	504
ETOUBOR NIPP	80.4	450		80.4	369.6
IBOM	77.6	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2383.4	9234.80		3000.4	6234.4

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : THURSDAY 05/07/2018

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum (MW)			
AVERAGE (MW)			

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 05/07/2018 = 0MW. FREQUENCY 50.50Hz.

S/N	POWER STATION	UNIT ON SPINNING RESERVE	CONTRACTED RESERVE	ACTUAL RESERVE (MW)	TOTAL (MW)
1	Egbin	ST2	100	0	0
		ST4		0	
		ST5		0	
		ST6		0	
2	Delta	GT16	40	0	0
		GT17	40	0	
3	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
4	Geregu NIPP	GT22	35	0	0
		GT1		0	
5	Omotosho NIPP	GT2	40	0	0
		GT3		0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Friday 06/07/2018 as at 0600Hrs was = 3477.5MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Alaji NIPP GT1, 2 & 4	360	0	360	1953
2	Olorunsogo Gas GT5, 7 & 8	114	0	114	
3	Geregu NIPP GT21 & 23	290	0	290	
4	Atam VI GT11 & ST10	340	0	340	
5	Olorunsogo NIPP GT1 - 3	360	0	360	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Omotosho Gas GT3, 4 & 8	114	0	114	
8	Geregu Gas GT13	145	0	145	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1662.50MMSCF OF GAS (EQUIVALENT TO 6234.4MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom Power GT3	115	77.6	37.4	61.1
2	Trans-Amadi GT1, 2 & 4	60	45.9	14.1	
3	Omoku GT1, 2, 5 & 6	80	70.4	9.6	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1				0	1143.4
2	Omotosho NIPP GT1	120	0	120	
3	Shiroro 411G2 & 4	250	135	115	
4	Azura-Edo GT11 - 13	461	225	236	
5	Ihobor NIPP GT1	75	0	75	
6	Delta GT16 & 19	180	0	180	
7	Omotosho Gas GT1, 2, 5 - 7	190	142.2	47.8	
8	Olorunsogo Gas GT1 - 4 & 6	190	134.4	55.6	
9	Atam VI GT12	150	0	150	
10	Geregu Gas GT11 & 12	250	175	75	
11	Okpai GT11 & 12	300	211	89	
				0	
				0	
				0	
4.4 DUE TO WATER MANAGEMENT					
1	Jebba 2G2 - 5	320	0	320	320
				0	
Grand Total					3477.5

5.0 **OUTAGES:**

5 (A) **FORCED OUTAGES (GENERATION):-**

- 12:11Hrs Paras Energy GTs 2 – 9 tripped on reverse power due to tripping of Ikorodu/Shagamu 132kV line. Total LHR = 69.4MW
13:41Hrs - GT2 was tied - 13:42Hrs, GT3 was tied, 13:45Hrs - GT4 was tied, 13:47Hrs - GT5 was tied, 13:49Hrs - GT7 was tied, 13:50Hrs - GT8 was tied, 13:53Hrs - GT9 was tied & 13:54Hrs - GT6 was tied.

5(B) **FORCED OUTAGES (TRANSMISSION):-**

- 02:00 – 02:43Hrs, Ihovbor/Okada 132kV line 1 CBs tripped at both ends on the following relay indications:
At Ihovbor T/S: ABB Relay: General trip zone 1, trip Yellow phase fault, STUD protection.
Micom Relay: O/C start I-4, E/F start IM-1, instantaneous trip zone 1, distance = 22.19km
At Okada T/S: ABB Relay: General trip zone 1, Yellow phase fault.
Micom Relay: General trip zone 1 Yellow phase fault. No load loss as line 2 was in service.
- 06:05 through 24:00Hrs, Shiroro/Mando 330kV line 1 (cct R1M) CBs tripped at both ends on the following relay indications:
At Shiroro T/S: Trip PHS-STFW, PHS-STFWPE, ZM1 trip fuse VTSZ, Z Com CS.
At Mando T/S: O/C Red phase back up trip relay flagged.
10:17Hrs, trial restoration of cct R1M at Shiroro T/S failed on the same relay indications. No load loss as ccts R2M & M2S were in service.
Note: To avoid over loading Shiroro/Mando 330kV line 2 (cct R2M), the load of Jos, Gombe & Yola complex was transferred to Makurdi/Jos 330kV line 2 (cct A2S) by opening Mando/Jos 330kV line (cct M2S).
- 06:05 - 09:32Hrs, Mando T/S 150MVA 330/132kV transformer T1A primary CB tripped on REF. LHR = 0.01MW
- 12:11 – 12:33Hrs, Ikorodu/Shagamu 132kV line CB tripped at Ikorodu T/S on distance protection B-N, distance = 18.6km. LHR = 5MW
- 14:20 – 15:30Hrs, Zaria T/S 40MVA 132/33kV transformer T4 primary & secondary CBs tripped on following relay indications:
Primary: on IDMT O/C.
Secondary: O/C. LHR = 2.5MW.
- 15:53 - 16:07Hrs, Akangba T/S 150MVA 330/132/33kV transformer 5T4B secondary CB tripped on O/C Phase A. LHR = 81MW.
- 15:53 – 16:12Hrs, Akangba/Ojo 132kV line 2 CB tripped at Akangba T/S on O/C Phases A, B & C. LHR = 32MW.
- 17:45 – 18:08Hrs, Benin/Omotosho 330kV line (cct B5M) CBs tripped at both ends on the following relay indications:
At Benin T/S: ABB Relay: Trip – trip – TRL3, PHS – STFWL3, PE, ZMI – Trip, EFC-CS, AR – IN PROG, DEF-Block, ZM2, 3 – start, ZCIP – CS L3, TOC – STL3, FLT loop = L3-N, Distance = 90.3km,
Auxiliary Relay: MVAJ K86C operated.
At Omotosho T/S: PSL 601 GA Relay: RTIP ABC.
PSL 602GA Relay: RT1 PC, GD Distance zone 1 trip, Phase A trip, zero-S-ZNI trip, Phase C grounded, Distance = 25.09km,
Auxiliary Relay: Phase ABC 1 & 2. No load loss as cct M5W was in service.
- 19:26 through 24:00Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary and secondary CBs tripped on the following relay indications:
Primary: Differential protection, REF, O/C Red & Yellow Phases.
Secondary: O/C Red & Yellow Phases. LHR = 15MW.

5 (C) **PLANNED OUTAGES:-**

- 09:16 – 18:34Hrs, Benin/Irrua 132kV line was taken out to cut dangerous trees on towers #112 – 114, 148 – 150 & 196 – 199. Load loss = 19.0MW.
- 11:30 through 24:00Hrs, Ajah T/S 150MVA 330/132kV transformer TR4 was taken out to carry out annual preventive maintenance on the transformer and its associated equipment. Load loss = 5MW.
- 11:32 – 16:33Hrs, Akoka T/S 40MVA 132/33kV transformer TR3 was taken out to carry out the following tests on the transformer: IR, Ratio, Magnetizing current & Short circuit and tests were successfully carried out. Load loss = 7MW.

5(D) **URGENT OUTAGES:**

- 15:22 – 16:18Hrs, Delta/Afiesiere 132kV line was taken out due to D.C failure at Afiesiere T/S. No load loss as the line was on soak.
- 14:48 – 16:42Hrs, Katampe T/S 100MVA 132/33kV transformer T3 was taken out to treat hot spot on Blue Phase isolator clamp. Load loss = 21.7MW.

9 **GENERATOR MERIT ORDER BASED ON SYSTEM RESPONSE AND GRID RELIABILITY**

- GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .
- GROUP 2A - UNITS FROM ODUK PANI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSOGO POWER PLC AND OMOTOSHO POWER PLC.
- GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.
- GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.
- GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED FOR THE ANCILLARY SERVICE).
- GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).
- GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

5 (E) **EMERGENCY OUTAGES:- Nil**

5 (F) **AUTOMATIC UNDER FREQUENCY OPERATION:- NIL.**

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A1K, U1A & A1S.

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- NIL.**

5 (I) **330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- NIL**

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts K4U, R1M, J2H & S5B.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J & F1K.

6 **WEATHER REPORT:-** Rainfall was reported at Katampe, Kaduna, Shiroro, Ikeja-West, Akangba, Ayede, Ganmo, Benin & Osogbo.

7 **INTERNATIONAL LINES:-**

A **IKEJA WEST/SAKETE 330KV LINE(TCN-PARAS)**

Maximum load - 276MW at 20:00Hrs.
Minimum load - 228MW at 04:00Hrs.

B **BIRNIN KEBBINAMEY 132KV LINE**

Maximum load - 106.0MW at 15:00Hrs.
Minimum load - 81.0MW at 07:00Hrs.

C **KATSINA/GAZAQUA/MARADI 132KV LINE**

Maximum load - 38.2MW at 20:00Hrs.
Minimum load - 26.0MW at 04:00Hrs.

8 **MISCELLANEOUS:-**

- 00:10 - 20:16Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 66MW
- 00:22 – 13:52Hrs, Delta P/S GT16 was shut down on frequency management. Load loss = 62MW
- 01:41Hrs, Afam VI GT12 was shut down on frequency management. Load loss = 147MW
- 02:10 - 15:57Hrs, Delta GT19 was shut down on frequency management. Load loss = 70MW
- 09:35Hrs, Geregu Gas GT13 was shut down on frequency management. Load loss = 30MW
- 10:19 - 17:00Hrs, Sapele NIPP GT1 was shut down on frequency management.
Load loss = 87.3MW
- 11:38 – 12:55Hrs, Gbarain NIPP GT3 was shut down due to gas constraint. Load loss = 18MW
- 12:44 – 15:05Hrs, Jebba 2G5 was shut down on frequency management. Load loss = 76MW
- 16:06 – 8:39Hrs, Jebba 2G5 was shut down on water management. Load loss = 76MW.
- 16:41 – 19:06Hrs, Kainji 1G12 was shut down on water management. Load loss = 47MW.

10 **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	27
OPTIC FIBRE	13	8
PLS	14	0

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	11	8
132kV	102	90	12

12(A) **UNAVAILABLE TRANSFORMERS/REACTORS:**

SHIRORO REGION:

- Birnin Kebbi 75MX Reactor R1.

ABUJA REGION

- Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.

KADUNA REGION:

- Kumbotso 150MVA 330/132/33kV transformer T1A - Burnt control cables.

BAUCHI REGION:

- Gombe T/S -30MX Reactor R2A.

ENUGU REGION:

- Onitsha T/S 90MVA 330/132/13.8kV transformer 9T2 - Out due to differential fault.

LAGOS REGION:

- Oke-Aro T/S: 75MX Reactor R1.

PORT HARCOURT REGION

- Ikot-Ekpene T/S: No available reactor.

12 (B) **UNAVAILABLE BREAKERS/ISOLATORS**

LAGOS REGION:

- Akangba T/S. 132kV Bus Coupler CB - Serious Air leakage.(Undergoing repair)
- Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- Otta/Ogba 132kV line isolator - defective control shaft.
- Osoybo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole .
- Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.

BENIN REGION:

- Omotosho T/S 330kV, 2nd series 330kV CB #3322 out due to control circuit problem.

ENUGU REGION:

- New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the transformers are protected by Nkalagu 132kV line CB.
- Oji River T/S 30MVA 132/33kV transformer T1A primary CB - The breaker is completely out of service and bypassed. The transformer is either protected by Onitsha/Oji 132kV line CB or New Haven/Oji 132kV line CB.
- Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.

SHIRORO REGION

- Jebba T/S 75MX reactor 2R2 CB - exploded.

PORT HARCOURT REGION

- New Haven/Nkalagu 132kV line 2 ground switch - Canibalized Red phase female contact and canibalized Yellow phase male contact.

- 18:40Hrs, Geregu Gas GT11 was tied. The unit was out due to gas constraint.
- 23:10Hrs, Jebba 2G2 was shut down on water management. Load loss = 69MW.
- 23:28Hrs, Delta GT16 was shut down on frequency management. Load loss = 81MW.
- 23:29Hrs, Azura-Edo reduced generation by 200MW. Frequency was 50.68Hz.

***** **LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.**

***** **THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.**

12(D) **UNAVAILABLE CAPACITOR BANK:**

- (i) Ogba T.S, (ii) Maiduguri T/S, (iii) Isolo T/S, (iv) Ado-Ekiti T/S, (v) Ilorin T/S, (vi) Akure T/S.

12(E) **UNAVAILABLE SKYWIRES**

LAGOS REGION

- Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 330kV Ikeja West/Osoybo line. - 95 spans.
- Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- Ikeja West/Akangba 330kV line 2 - 1 span.
- Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- Akangba/Ire 132kV lines 1 & 2 - 1 span.
- Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- Ikeja West/Otta 132kV lines 1 & 2- 17 spans.

SHIRORO REGION

- Jebba T/S 330kV Osoybo lines 1 & 2 and Ganmo line - 9 spans
- Minna T/S 132kV Bida line - 32 spans
- Shiroro T/S 330kV Jebba line 2 - 28 spans

ABUJA REGION

- Apo T/S 132kV Keffi line - 36 spans

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- Benin, Ikeja West, Onitsha, Egbin, Uguwaji, Osoybo, Kaduna, Jos, Gwagwalada & Alaaji T/S.

FOR MORE INFORMATION: NCC Telephone Lines -

- PAX 09/300, 309, 303 & 305.
- NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
- PLS - 622
- GM (NCC) - 08036744641.
- AGM (S/O) - 08056002757, CUG: 08129458475

