

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF THURSDAY 05/07/2018

FOR: EVENTS OF WEDNESDAY 04/07/2018

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	04/07/2018
GENERATION CAPABILITY	7267.3	-00-	-00-
UNITS ON BARK CAPABILITY AT PEAK	4893.4	-00-	-00-
PEAK GENERATION	4438.6	-00-	-00-
LOWEST GENERATION	3437.3	04:00	04/07/2018
8-HOURLY DURATION PEAK	4138.9	0100-0800	-00-
	3887.6	0900-1600	-00-
	4401.6	1700-2400	-00-
PEAK GENERATION TO DATE	5222.3	21:00	18/12/2017
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	06:00	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	354	Omotosho T/S	14:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe, Kumbotso & Yola T/S	10:00, 11:00 & 20:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.02	00:08
LOWEST FREQUENCY	49.99	19:21

1.4 SYSTEM COLLAPSE UP DATE

		No. of days since last total collapse: 26												No. of days since last partial collapse: 79														
		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	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	1	0	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	204	122
2 JEBBA	HYDRO	252	148
3 SHIRORO	HYDRO	383	250
4 EGBIN ST2 - 5	STEAM	373	392
5 SAPELE	STEAM	47	48
6 DELTA	GAS	601	411
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	120	151
9 OMOTOSHO GAS	GAS	168.7	126.8
10 OLORUNSOGO GAS	GAS	163.8	127.6
11 GEREGU NIPP	GAS	125	106
12 SAPELE NIPP	GAS	193	137.5
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	210.8	177.1
16 ODUKPAI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	92.1	90.6
18 OKPAI	GAS	265	192
19 AFAM VI	GAS	293	214
20 IBOM POWER	GAS	93.5	71.5
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	52.5	49
24 TRANS AMADI	GAS	384	50.2
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	450	275
27 EGBIN ST6	(GAS)	146	160
28 PARAS ENERGY	(GAS)	71.8	68.6
29 GBARAIN NIPP	GAS	92	69.4
<b>TOTAL</b>		<b>4438.6</b>	<b>3437.3</b>

  

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	3443.60	143.48
2 JEBBA	HYDRO	4005.00	166.88	3989.16	166.22
3 SHIRORO	HYDRO	7784.00	324.33	7756.30	323.18
4 EGBIN ST2 - 5	STEAM	9217.00	384.04	8776.50	365.77
5 SAPELE	STEAM	1015.80	42.33	971.70	40.49
6 DELTA	GAS	13008.27	542.01	12726.60	530.28
7 AFAM IV-V	GAS	116.00	4.83	113.52	4.73
8 GEREGU GAS	GAS	3700.10	154.17	3675.30	153.14
9 OMOTOSHO GAS	GAS	3380.00	140.83	3347.90	139.50
10 OLORUNSOGO GAS	GAS	3747.87	156.16	3719.86	154.99
11 GEREGU NIPP	GAS	2844.25	118.51	2830.62	117.94
12 SAPELE NIPP	GAS	4225.24	176.05	4201.72	175.07
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	4627.70	192.82	4597.30	191.55
16 ODUKPAI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2330.00	97.08	2313.17	96.38
18 OKPAI	GAS	5543.00	230.96	5471.20	227.97
19 AFAM VI	GAS	5726.08	238.59	5631.15	234.63
20 IBOM	GAS	1542.61	64.28	1534.00	63.92
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	8317.65	346.57	8293.40	345.56
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1168.50	48.69	1138.59	47.44
25 TRANS AMADI	GAS	1048.00	43.67	1023.70	42.65
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	3729.00	155.38	3534.80	147.28
28 PARAS ENERGY	GAS	1683.40	70.14	1676.20	69.84
29 GBARAIN NIPP	GAS	1832.30	76.35	1814.80	75.62
<b>TOTAL</b>		<b>94,051.77</b>	<b>3,918.82</b>	<b>92,583.09</b>	<b>3,857.63</b>

1.7A GENERATION POSITION AT 06:00HRS OF THURSDAY 09/07/2018

	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	157	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 & 5 2	166	166	2G2, 3 & 4 - Out 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	265	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	381	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	45	ST2 1	45	45	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	429	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	64	GT18 1	64	64	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	GT12 & 13 2	90	90	GT11 - Out due to gas constraint. GT12 & 13 - Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2, 5 - 7 5	190	126.9	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	132.3	GT5, 7 & 8 - Out due to gas constraint. Generation reduced on frequency management.
	GEREGU NIPP	3	GT21 - 23 3	435	435	GT22 3	145	120	GT21 & 23 - Out due to gas constraint.
	NIPP	SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	117.4
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	192.2	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	94.5	94.5	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	91.4	Available unit on bar.
OKPAI GAS/STEAM		3	GT11 & 12 2	300	300	GT11 & 12 2	300	228	ST18 - Out due to water shortage.
AZURA - EDO		3	GT11 - 13 3	461	461	GT11 - 13 3	461	325	GT11 - Generation reduced on frequency management.
AFAM VI GAS/STEAM		4	GT11 - 13 & ST10 4	650	640	GT13 1	150	116	GT11 & ST10 - Out due to gas constraint. GT12 - Shut down on frequency management.
IPP	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	71.7	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	GT5 & 6 2	50	40	GT5 & 6 2	40	28.3	GT1 & 2 - Tripped on reverse power. 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	41	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	79	7645.5	7120.5	52	4051	3281.7	Frequency = 50.40Hz.

1.7B GENERATION POSITION AT 06:00HRS OF THURSDAY 05/07/2018 FOR UNITS ON BILATERAL AGREEMENT

		ST6				ST6				Available unit on bar.
		1	1			1	1			
EGBIN	1	1	220	155	1	155	155	155	155	Available unit on bar.
PARAS ENERGY	8	GT2 - 9		69.4	69.4	GT2 - 9		69.4	69.4	Available units on bar.
		8				8				
SUB TOTAL	9	9	289.4	224.4	9	224.4	224.4	224.4	224.4	
GRAND TOTAL	140	88	7934.9	7344.9	61	4,275.40	3,506.10	3,506.10	3,506.10	Frequency = 50.40Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - WEDNESDAY 04/07/2018.  
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
U-STEEL	On	01:00			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
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
TR4 15MVA	3.7	11:00			24		Nil
TR5 -15MVA	3.7	11:00			24		Nil
ALAUZA	8.4	08:00			24		Nil
PTC (MARYLAND)	9	18:00			24		Nil
<b>TOTAL LOAD</b>	<b>64.8</b>						

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB OF WEDNESDAY - 04/07/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	71.8	20:00	68.6	09:00	24	1684.4	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: WEDNESDAY - 04/07/2018

COMPANY NAME	VOL-TAGE LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line	25	38	18:00	8	24:00	24	697	SUPPLY NOT INTERRUPTED
KAM STEEL									
ASAKA CEMENT	33kV feeder	0	8.8	16:00	4.4	03:00	24	134.3	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15.0	2.2	18:00	0.5	04:00	24	20.0	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.3	12:00	0.6	24:00	24	36.2	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0	0			0	0	E/F

**1.8 HYDROLOGICAL DATA: THURSDAY 05/07/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	130.04	99.90	362.48
TAIL WATER ELEVATION (METERS)	101.98	73.30	271.00
GROSS OPERATING HEAD (METERS)	<b>28.06</b>	<b>26.60</b>	<b>91.48</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	518.00	724.00	409.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>518</b>	<b>724</b>	<b>409</b>
COMPUTED INFLOW (M3/SEC)	847.00	747.00	791.00
STORAGE DIFFERENTIAL	<b>329.00</b>	<b>23</b>	<b>382</b>
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 WEDNESDAY 04/07/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	533.7	21:00	510.19	252.2	17:00
EKO	429.1	23:00	492.36	347.9	18:00
<b>IKEJA</b>	<b>560.6</b>	<b>23:00</b>	<b>535.04</b>	<b>408</b>	<b>13:00</b>

**2.0 GAS POSITION: THURSDAY 05/07/2018**

STATION	SIGNED ACQ Annual Contracted Quantity MMSCFD	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCFD)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EBBIN P/S	381	1100		396	704
DELTA (GAS)	429	915		595	520
OMOTOSHO GAS	126.9	336.8		190	146.8
OMOTOSHO NIPP	192.2	500		240	260
OLORUNSOGO (GAS)	132.3	336		190	146
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	117.4	500		225	275
SAPELE STEAM	45	720		45	675
AFAM IV-V	64	300		64	236
AFAM VI	116	650		150	500
GEREGU GAS	90	435		290	145
GEREGU NIPP	120	435		145	290
ORPANI (GAS/STEAM)	228	480		360	120
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	94.5	450		94.5	355.5
IBOM	71.7	198		115	83
ODUKPANI NIPP	0	625		0	625
<b>TOTAL</b>	<b>2288</b>	<b>9234.80</b>		<b>3039.5</b>	<b>6195.3</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : WEDNESDAY 04/07/2018**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 05/07/2018 = 0MW. FREQUENCY 50.40Hz.**

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	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

**4.0 UNAVAILABLE GENERATION CAPABILITY**

The unavailable generation capability for Thursday 05/07/2018 as at 0600Hrs was = 3316.4MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Alaoji NIPP GT1, 2 & 4	360	0	360	2153
2	Olorunsogo Gas GT5, 7 & 8	114	0	114	
3	Geregu NIPP GT21 & 23	290	0	290	
4	Alam VI GT11 & ST10	340	0	340	
5	Olorunsogo NIPP GT1 - 3	360	0	360	
6	Odokpani NIPP GT4 & 5	230	0	230	
7	Omotosho Gas GT3, 4 & 8	114	0	114	
8	Geregu Gas GT11 - 13	435	90	345	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1652.08MSCF OF GAS (EQUIVALENT TO 6195.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	78.1	38.9	69.6
2	Trans-Amadi GT1, 2 & 4	60	41	19	
3	Omoku GT5 & 6	40	28.3	11.7	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1				0	933.8
2	Omotosho NIPP GT1	120	0	120	
3	Shiroro 411G2 & 4	250	125	125	
4	Azura-Ede GT11	163	0	163	
5	Ihobor NIPP GT1	75	0	75	
6	Delta GT16 & 19	190	0	190	
7	Omotosho Gas GT1, 2 % - 7	190	126.9	63.1	
8	Olorunsogo Gas GT1 - 4 & 6	190	132.3	57.7	
9	Alam VI GT12	150	0	150	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Jebba 2G3 & 4	160	0	160	160
				0	
<b>Grand Total</b>					<b>3316.4</b>

5.0 **OUTAGES:-**

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

- 1 17:36Hrs, Trans-Amadi GTs 1, 2 & 4 tripped on system surge. Total LHR = 50.7MW. 19:02Hrs - GT2 was tied, 19:04Hrs – GT4 was tied, 19:12Hrs – GT1 was tied.
- 2 17:36Hrs, Omoku GTs1 & 5 tripped on system surge. Total LHR = 27.6MW. 19:05Hrs – GT1 was tied & 19:06Hrs – GT5 was tied.

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

- 1 09:14 – 14:52Hrs, Ilorin T/S 60MVA 132/33kV transformer T1A primary GCB tripped on O/C 3 Phases and trip relay. LHR = 19.9MW.
- 2 13:15 - 13:26Hrs, Alaoji/Umuahia 132kV line 1 CB tripped at Alaoji T/S on Micom relay: Distance protection – started phase C-N, distance start Z2, Z3, O/C START i>1, E/F start IN >1 & 2. LHR = 4.0MW.
- 3 13:19 – 13:55Hrs, Benin/Irrua 132kV line CB tripped at Benin T/S on distance protection, E/F Blue phase, period = 348ms, distance = 3.1km. LHR = 4.3MW
- 4 19:15 – 19:45Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom Relay – ie >, i>L3, ie>>, i>> L1 & L3, ti >L1, L2 & L3. LHR = 20MW.

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

- 1 09:52 – 18:58Hrs, Aba/Itu 132kV line was taken out to string OPGW skywire and 6Phase wire on Ikot-Ekpene/Ugwuaji double cct lines 1 & 2 (ccts K1U & K2U). Load loss = 20MW.
- 2 10:38 - 12:42Hrs, Kumbotso/Hadejia 132kV tie/line CBs were taken out for mid-year preventive maintenance at Kumbotso T/S. Load loss = 4.8MW

5(D) **URGENT OUTAGES:-**

- 1 09:52 - 19:04Hrs, Iboru Power GT3 went on island operation feeding Eket, Itu & Uyo due to outage on Aba/Itu 132kV line. Load reduced from 89MW to 44.9MW
- 2 00:29 through 24:00Hrs, Egbin ST5 was shut down due to boiler tube leakage. Load of 57MW was transferred to other units.
- 3 12:32 - 15:14Hrs, Ayede T/S 100MVA 132/33kV transformer T1 was taken out to treat hot spot on the Yellow phase secondary down dropper conductor clamp. Load loss = 45MW
- 4 12:35 - 14:50Hrs, Kumbotso T/S 150MVA 330/132/33kV transformer T3A was taken out to amend Blue phase secondary conductor that was observed almost cut. Load loss = 80MW
- 5 13:04 – 14:11Hrs, Omotosho T/S 150MVA 330/132/33kV transformer T1 CB #313 was taken out to build up low SF6 gas pressure on the Blue Phase to normal. No load loss as the tie CB was in service.

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 ODUKPANI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSGO 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).

10 **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	16
OPTIC FIBRE	13	6
PLS	14	0

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, J2H & S5B.

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

6 **WEATHER REPORT:-** Rainfall was reported at Shagamu, Osogbo & Kano.

7 **INTERNATIONAL LINES:-**

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

Maximum load - 293MW at 20:00Hrs.  
Minimum load - 219MW at 07:00Hrs.

B **BIRNIN KEBBI/NIAMEY 132KV LINE**

Maximum load - 107.0MW at 15:00Hrs.  
Minimum load - 82.0MW at 07:00Hrs.

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

Maximum load - 38.8MW at 22:00Hrs.  
Minimum load - 25.0MW at 03:00Hrs.

8 **MISCELLANEOUS:-**

- 1 00:08 - 05:43Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 68MW.
  - 2 00:15 - 05:43Hrs, Delta GT16 was shut down on frequency management. Load loss = 70MW.
  - 3 00:37Hrs, Geregu Gas GT12 generation was reduced by 50MW on frequency management.
  - 4 00:54Hrs, Afam VI GT12 generation was reduced by 33MW on frequency management.
  - 5 01:07 - 05:41Hrs, Azura-Edo IPP GT13 generation was reduced by 50MW on frequency Management.
  - 6 01:48 - 05:38Hrs, Shiroro 411G2 generation was reduced by 50MW on frequency management.
  - 7 08:12 - 19:11Hrs, Jebba 2G2 was shut down on water management. Load loss = 82MW.
  - 8 08:29 - 15:55Hrs, Delta GT16 was shut down on frequency management. Load loss = 80MW.
  - 9 09:26Hrs, Delta GT10 was tied. The unit was out due to oil leakage on the unit.
  - 10 12:03 - 17:39Hrs, Jebba 2G5 was shut down on frequency management. Load loss = 75MW.
  - 11 19:00 - 19:23Hrs of 03/07/2018, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom relay: i> L1, L2, ti>L1, L2, L3. LHR = 52MW.
  - 12 20:13Hrs, Owerri/Ahoada 132kV line 2 was restored. The line tripped at 01:25Hrs of 30/06/2018.
  - 13 22:18Hrs, Afam IV P/S GT18 was tied. The unit was out due to air blow valve not closing.
- \*\*\*\*\*  
**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.**

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:**

- 1 Birnin Kebbi 75MX Reactor R1.

**ABUJA REGION**

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

**KADUNA REGION:**

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

**BAUCHI REGION:**

- 1 Gombe T/S -30MX Reactor R2A.

**ENUGU REGION:**

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

**LAGOS REGION:**

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

**PORT HARCOURT REGION**

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

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

**LAGOS REGION:**

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

**BENIN REGION:**

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

**ENUGU REGION:**

- 1 New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 2 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.
- 3 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.
- 4 Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.

**SHIRORO REGION**

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

**PORT HARCOURT REGION**

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

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

- 1 (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**

- 1 Omosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- 2 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 3 330kV Ikeja West/Osogbo line. - 95 spans.
- 4 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 5 Ikeja West/Akangba 330kV line 2 - 1 span.
- 6 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 7 Akangba/Iire 132kV lines 1 & 2 - 1 span.
- 8 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 9 Ikeja West/Otta 132kV lines 1 & 2- 17 spans.

**SHIRORO REGION**

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

**ABUJA REGION**

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

12 (F) **UNAVAILABLE SYNCHROSCOPES**

- 1 Benin, Ikeja West, Onitsha, Egbin, Uguwuji, Osogbo, Kaduna, Jos, Gwagwalada & Alaaji T/S.

**FOR MORE INFORMATION: NCC Telephone Lines -**

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



