

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF FRIDAY 08/06/2018

FOR: EVENTS OF THURSDAY 07/06/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	21:15	07/06/2018
GENERATION CAPABILITY	7229.3	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4449.8	-do-	-do-
PEAK GENERATION	4079.5	-do-	-do-
LOWEST GENERATION	3516.5	08:00	07/06/2018
8-HOURLY DURATION PEAK	3909.3	0100-0800	-do-
	3924.4	0900-1600	-do-
	4079.5	1700-2400	-do-
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	350	Omotosho T/S	03:00
LOWEST VOLTAGE FOR THE DAY	280	Ayede T/S	13:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.56	07:48
LOWEST FREQUENCY	49.57	21:20

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 118												
Date of last partial collapse: 12 <sup>th</sup> April., 2018		No. of days since last partial collapse: 54												
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	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	0	3			9
2018	Total	5	1	0	0	0								6
	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	174	118
2 JEBBA	HYDRO	245	147
3 SHIRORO	HYDRO	250	224
4 EGBIN ST2 - 5	STEAM	411	436
5 SAPELE	STEAM	57	0
6 DELTA	GAS	482	337
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	160	195
9 OMOTOSHO GAS	GAS	136.2	142.8
10 OLORUNSOGO GAS	GAS	166.6	139
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	218.8	130.9
13 ALAOJI NIPP	GAS	114.2	85.5
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	217.4	155.1
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	105.3	78.4
18 OKPAI	GAS	272	205
19 AFAM VI	GAS	419	532
20 IBOM POWER	GAS	21.2	71.1
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	0	41.1
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	458	309
27 EGBIN ST6	(GAS)	100	101
28 PARAS ENERGY	(GAS)	71.8	68.6
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4079.5</b>	<b>3516.5</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	3611.00	150.46	3596.60	149.86
2 JEBBA	HYDRO	4308.00	179.50	4288.36	178.68
3 SHIRORO	HYDRO	5834.00	243.08	5806.78	241.95
4 EGBIN ST2 - 5	STEAM	10163.00	423.46	9677.90	403.25
5 SAPELE	STEAM	796.80	33.20	796.20	33.18
6 DELTA	GAS	11019.90	459.16	10825.50	451.06
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	4763.40	198.48	4735.89	197.33
9 OMOTOSHO GAS	GAS	3290.00	137.08	3265.90	136.08
10 OLORUNSOGO GAS	GAS	3313.40	138.06	3284.26	136.84
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	4401.39	183.39	4381.69	182.57
13 ALAOJI NIPP	GAS	2287.63	95.32	2265.33	94.39
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	4613.70	192.24	4592.70	191.36
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2150.00	89.58	2132.18	88.84
18 OKPAI	GAS	5680.00	236.67	5619.10	234.13
19 AFAM VI	GAS	11928.90	497.04	11710.26	487.93
20 IBOM	GAS	1058.22	44.09	1051.00	43.79
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	9129.30	380.39	9104.00	379.33
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	408.10	17.00	399.12	16.63
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	2389.00	99.54	2264.30	94.35
28 PARAS ENERGY	GAS	1679.70	69.99	1671.40	69.64
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>92,825.44</b>	<b>3,867.73</b>	<b>91,468.47</b>	<b>3,811.19</b>

1.7A GENERATION POSITION AT 06:00HRS OF FRIDAY 08/06/2018

	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, 6 & 12 3	340	270	1G5 & 6 2	190	160	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. 1G11- Out on maintenance. 1G12 - Out on water management.
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1 & 5 2	190	168	2G1 & 5 - On frequency response. 2G2-4 - Out on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G 2 & 4 2	280	280	411G2 & 4 2	250	250	411G1 - Out on inspection. 411G3 - Out on maintenance. Generation reduced due to low gross operating head.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	537	ST1, 2, 4 & 5 4	373	373	ST3 - Out on high vibration since 19th June 2017.
	SAPELE (STEAM)	1	ST2 1	120	58	ST2 1	58	58	ST1 - Out on low drum level. 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, 11-13, 15, 16 & 18 - 20 10	595	595	GT7, 9, 11 -13, 15, 16, 18 & 19 9	466	432	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8, 10 & 14 - Out on major overhaul. GT15 - On frequency response. GT17 - Out on excitation trouble. GT20 - Out on frequency management.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 - Shut down due to oil leakage on the unit bearing compartment. GT18 - Out on lube oil pressure problem. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 1	101	101	GT11 & 13 - Out due to low gas pressure. Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 6 - 8 4	152	142	GT1, 3 - 5 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4 - 6 4	152	139	GT1, 3, 5 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	0 0	0	0	GT21 - 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	186.1	GT2 - Out due to high air inlet differential pressure. GT4 - Out on general fire alarm.
	ALAOJI NIPP GAS	4	GT1 & 4 2	250	240	GT4 1	115	115	GT1 - Out due to low gas pressure. GT2 - Out due to low gas temperature. GT3 - Shut down due to generator air inlet filter trouble.
	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	GT1 & 2 2	240	184	GT3 - Shut down due to oil leakage on the unit. GT4 - Out due to gas constraint.
	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 3	337.5	315	GT3 1	110	95.1	GT1 & 2 - Out due to gas constraint. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out on loss of back feed.
IPP	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	249	ST18 - Out due to water shortage.
	AZURA - EDO	3	GT11 - 13 3	459	459	GT11 - 13 3	459	414	Available units on bar.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11, 13 & ST10 3	418	418	GT12 - Out on frequency management.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	24.8	GT3 - On Island operation due to the tripping of Aba/Itu 132kV line.
	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	GT2 & 5 2	44.8	44.8	0 0	0	0	GT1 - Out on fault. GT2 & 5 - Shut down to replace damage VTs of GT1. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 - Out due to lube oil low pressure.
	TRANS-AMADI	4	GT1 & 2 2	50	40	0 0	0	0	GT1 & 2 - Out due to line constraint since 03/04/2018. GT3 - Out on fault. GT4 - Tripped on generator differential lockout.
	RIVERS	1	GT1 1	180	160	0 0	0	0	GT1 - Out due to low gas pressure.
<b>SUB TOTAL</b>	<b>126</b>	<b>77</b>	<b>7833.3</b>	<b>7181.8</b>	<b>44</b>	<b>3914</b>	<b>3509</b>	Frequency = 50.21Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 08/06/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	NO. OF UNITS	UNIT TYPE	MAX. LOAD (MW)	GENERATION (MW)	NO. OF UNITS	UNIT TYPE	MAX. LOAD (MW)	GENERATION (MW)	REMARKS
EGBIN	1	ST6	220	90	1	ST6	90	90	Available unit on bar.
PARAS ENERGY	8	GT2 - 9	70.2	70.2	8	GT2 - 9	70.2	70.2	Available units on bar.
<b>SUB TOTAL</b>	<b>9</b>	<b>9</b>	<b>290.2</b>	<b>160.2</b>	<b>9</b>	<b>9</b>	<b>160.2</b>	<b>160.2</b>	
<b>GRAND TOTAL</b>	<b>135</b>	<b>86</b>	<b>8123.5</b>	<b>7342</b>	<b>53</b>	<b>4,074.20</b>	<b>3,669.20</b>		Frequency = 50.21Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 07/06/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	1	0700HRS	24	NIL
	PTCEXPRESS	7	0800HRS	24	NIL
	SANKYO	ON	0100HRS	24	NIL
	FEEDER 8	16	1100HRS	24	NIL
IKORODU	PULK IT	3	1200	24	NIL
	INDUSTRIAL	18	2200	24	NIL
	SPINTEX	11	1200	23	O/S ON PLANNED OUTAGE
	DANGOTE	2	0100	24	NIL
	LAND CRAFT	15	0400	24	NIL
ALAUSA	TR4 15MVA	7.4	15;00	24;00	NIL
	TR5 -15MVA	6	10;00	24	NIL
	ALAUSA	17.7	15;00	24	NIL
M/LAND	PTC (MARYLAND)	18MW	0800HRS	0	OUT ON PLANNED OUTAGE
	LORDSMITH (PAPALANTO)	0.4	100	24	NILL
	<b>TOTAL LOAD</b>	<b>104.5</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	71.8	21:00	24	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF THURSDAY - 07/06/2018

COMPANY NAME	VOLTAGE LEVEL	EXPECTED CONTRACTUAL LOAD (MW)	MAX	TIME	HOUR IN SERVICE	REMARK
INNER GALAXY	132kV line	25	ON	01:00	24	NIL
KAM STEEL		Not commissioned				
ASAKA CEMENT	33kV feeder	0	6.2	17:00	24	NIL
KAM INTEGRATED		15	1.4	18:00	24	NIL
OLAM FLOUR MILLS		3	0.2	16:00	24	NIL
LORDSMITH		3	0.4	13:00	24	NIL

**1.8 HYDROLOGICAL DATA: FRIDAY 08/06/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	131.09	99.81	359.79
TAIL WATER ELEVATION (METERS)	101.72	72.9	271
GROSS OPERATING HEAD (METERS)	<b>29.37</b>	<b>26.91</b>	<b>89.29</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	537.00	767.00	322.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>537</b>	<b>767</b>	<b>322</b>
COMPUTED INFLOW (M3/SEC)	47.00	628.00	219.00
STORAGE DIFFERENTIAL	<b>-490.00</b>	<b>-139</b>	<b>-103</b>
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355

**1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT THURSDAY 07/06/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	469.00	13:00	471.02	306.5	17:00
EKO	438.90	23:00	550.54	339.8	20:00
IKEJA	645.1	19:00	614.38	495.4	12:00

**2.0 GAS POSITION: FRIDAY 08/06/2018**

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	403	1100		463	637
DELTA (GAS)	412	915		466	449
OMOTOSHO GAS	105.2	336.8		152	184.8
OMOTOSHO NIPP	101.9	500		240	260
OLORUNSOGO (GAS)	111.7	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	83.8	500		225	275
SAPELE STEAM	0	720		58	662
AFAM IV-V	0	300		0	300
AFAM VI	516	650		450	200
GEREGU GAS	261	435		101	334
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	226	480		300	180
ALAOJI NIPP	86.9	504		120	384
IHOVBOR NIPP	92.8	450		110	340
IBOM	77.4	198		115	83
ODUKPANI NIPP	0	625		0	625
<b>TOTAL</b>	<b>2477.7</b>	<b>9234.80</b>		<b>2952</b>	<b>6282.8</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : THURSDAY 07/06/2018**

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum			
AVERAG			

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF FRIDAY 08/06/2018 = 0MW. FREQUENCY 50.21Hz.**

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 Friday 08/06/2018 as at 0600Hrs was = 2984.2MW.

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	Omotosho NIPP GT4	120	0	120	2239
2	Alaoji NIPP GT1	120	0	120	
3	Geregu NIPP GT21 - 23	435	0	435	
4	Olorunsogo NIPP GT1 - 3	360	0	360	
5	Rivers GT1	160	0	160	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Omotosho Gas GT1, 3 - 5	152	0	152	
8	Olorunsogo Gas GT1, 3, 5 & 7	152	0	152	
9	Ihovbor NIPP GT1 & 2	220	0	220	
10	Geregu GT11 & 13	290	0	290	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1675.41MMSCF OF GAS (EQUIVALENT TO 6282.8MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Trans-Amadi GT1 & 2	40	0	40	130.2
2	Ibom GT3	115	24.8	90.2	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Delta GT20	100	0	100	250
2	Afam VI GT12	150	0	150	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Kainji 1G12	80	0	80	365
2	Jebba 2G2 - 4	285	0	285	
<b>Grand Total</b>					<b>2984.2</b>

**5.0 OUTAGES:**

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

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

- 1 09:21 – 09:28Hrs, Birnin-Kebbi/Sokoto 132kV line CB tripped at Birnin-Kebbi T/S on LED (General trip) LED 2 (O/C trip), LED 3 (Yellow Phase) 86 lockout and 27 minimal voltage relays. LHR = 58MW.
- 2 09:21 – 09:26Hrs, Birnin-Kebbi/Niamey 132kV line CB tripped at Birnin-Kebbi T/S on distance protection relay zone 2 and 86 lockout relay operated. LHR = 92MW.
- 3 11:46 through 24:00Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on O/C & E/F. LHR = 36MW.
- 4 14:08 – 14:30Hrs, Alaoji/Afam 132kV line 1 CB tripped at Alaoji T/S on trip relay. No load loss as the line was on soak.
- 5 15:10 – 15:18Hrs, Birnin-Kebbi/Niamey 132kV line CB tripped at Birnin-Kebbi T/S on distance protection zone 2 and 86 lockout relay. LHR = 103MW.
- 6 22:34 – 22:43Hrs, Birnin-Kebbi/Niamey 132kV line CB tripped at Birnin-Kebbi T/S on distance protection and lockout relay. LHR = 102MW.
- 7 22:34 – 23:20Hrs, Osogbo/Ganmo 330kV line (cct H3G) CBs tripped at both ends on the following relay indications:  
**At Osogbo T/S:** Micom relay – zone 1, started Phase B –N, trip Phase B –N, distance start Z1 – 3, distance trip Z1 aided 1 trip, distance O/C start 1 > 12, MVAJ 86T/1, 86 ABC/1. Auxiliary relay: carrier signal received & YSI/C.  
**At Ganmo T/S:** Carrier protection trip. LHR = 55.3MW.
- 8 22:35Hrs, Ayede T/S 150MVA 330/132/33kV transformer T1A primary & secondary CBs tripped on O/C and E/F. LHR = 28MW.
- 9 23:54 through 24:00Hrs, Alaoji /Owerri 132kV line 1 CB tripped at Alaoji T/S on the following relay indications:  
Optimho relay: Z1 B-N, location = 78.17km, period = 70.0ms.  
Siemens relay: Relay trip, instantaneous trip, IE >> Red & Yellow Phases 2X3 Phases trip, back up protection. LHR = 38MW.

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

- 1 10:16 – 14:43Hrs, Jebba/Shiroro 330kV line 2 (cct J7R) was taken out to enable maintenance crew carry out annual preventive maintenance on the line CB and its associated equipment at Jebba T/S. No load loss as cct J3R was in service.
- 2 10:40 – 15:05Hrs, Benin/Oghara 132kV line was taken out for annual preventive maintenance on line CB at Benin T/S. Load loss = 28.6MW.
- 3 14:35 – 16:18Hrs, Gombe/Savannah 132kV line was taken out to cut dangerous tree under the line. Load loss = 0.6MW.
- 4 16:43 – 17:52Hrs, Shagamu/Ijebu-Ode 132kV line was taken out to install primary isolator for proposed 60MVA 132/33kV transformer. Load loss = 0.1MW.

**5(D) URGENT OUTAGES:**

- 1 09:29 – 15:26Hrs, Osogbo/Ayede 330kV line (cct H2A) was taken out as additional apparatus for safe working space to enable maintenance crew connect Osogbo/Ilesha 132kV line that had line CB mechanism problem to new Osogbo/Ede/Iwo 132kV line at tower #1. No load loss as ccts R2A & H1W were in service.
- 2 09:30 through 24:00Hrs, Omoku P/S GT2 was taken out of service for safe working space to replace damaged VTs on GT1 medium voltage compartment. Load loss = 21.2MW.
- 3 09:32 through 24:00Hrs, Omoku P/S GT5 was taken out of service for safe working space to replace damaged VTs on GT1 medium voltage compartment. Load loss = 20.9MW.
- 4 11:20 – 12:15Hrs, Shiroro/Mando 330kV line 1 (cct R1M) tie CB was released to maintenance crew build up low SF6 gas pressure to normal at Shiroro P/S. No load loss as the main CB was in service.
- 5 12:09 – 13:32Hrs, Effurun T/S 60MVA 132/33kV transformer T21 was taken out to enable maintenance crew top up low oil level in the conservator tank to normal. Load loss = 14.6MW
- 6 12:08 – 14:20Hrs, Mando/Kaduna town 1 132kV line 1 was taken out due to fire out break on low voltage armored cable of 60MVA 132/33kV transformer T2A at Kaduna town 1 T/S. Load loss = 53MW.
- 7 13:17 – 14:36Hrs, Delta T/S 30MVA 132/33kV transformer T2 was taken out to build up low SF6 gas pressure of the primary GCB to normal. No load interrupted as the transformer was on soak.

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

GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .

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

**The under mentioned line was opened on frequency control.**

- 1 18:46 – 19:07Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. Load loss = 60MW. Frequency was 49.94Hz.

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

**5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A2K, 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 A2S, K4U & S5B.

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

**6 WEATHER REPORT:-** Rainfall reported at Katampe, Osogbo & Alaoji.

**7 INTERNATIONAL LINES:-**

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

Maximum load - 288MW at 20:00Hrs.

Minimum load - 217MW at 07:00Hrs.

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

Maximum load - 103.0MW at 15:00Hrs.

Minimum load - 71.0MW at 16:00Hrs.

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

Maximum load - 48.8MW at 16:00Hrs.

Minimum load - 36.1MW at 12:00Hrs.

**8 MISCELLANEOUS:-**

- 1 00:07 through 24:00Hrs, Jebba 2G3 was shut down on water management. Load loss = 80MW.

- 2 00:42 – 14:22Hrs, Delta GT20 was shut down on frequency management. Load loss = 94MW.

- 3 07:05Hrs, Mando T/S 75MX 330kV Shunt Reactor 3R3 was switched on for voltage control. Voltage Profile: 338/329kV.

GROUP 2A - UNITS FROM ODUKPANI, 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).

**11 (A) COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	26
OPTIC FIBRE	13	8
PLS	14	0

**11 (B) SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	7	12
132kV	102	85	17

- 4 08:23 through 24:00Hrs, Geregu Gas GT13 was shut down due to low gas pressure. Load loss = 60MW.
- 5 08:30Hrs, Sapele Steam ST02 was tied. The unit was shut down due to tripping of generator transformer
- 6 09:25Hrs, Jebba 2G4 was tied to swap with unit 2G5.
- 7 09:26Hrs, Jebba 2G5 was shut down after its load had been transferred to unit 2G4.
- 8 11:46 through 24:00Hrs, Ibom Power GT3 went on island operation feeding Eket, Uyo & Itu due to the tripping of Aba/Itu 132kV line. Load reduced from 70MW to 24.9MW.
- 9 13:04Hrs, Afam VI P/S GTs 11 & 13 generation was reduced to minimum (110MW each) on frequency management.
- 10 13:55Hrs, Jebba 2G5 was tied to swap with unit 2G4
- 11 13:56 - 17:06Hrs, Jebba 2G4 was shut down after its load had been transferred to 2G5.
- 12 13:50Hrs, New Haven T/S 60MVA 132/33kV transformer 2T2 was restored. The transformer was out on fault.
- 13 15:26 – 22:07Hrs, Afam VI GT12 was shut down due to gas constraint. Load loss = 126MW.
- 14 16:49Hrs, Shiroro P/S increased generation by 100MW. Frequency was 50.10Hz.
- 15 20:00Hrs, Olorunsogo Gas GT5 was tied. The unit was out due to gas constraint.
- 16 21:51 through 24:00Hrs, Jebba 2G4 was shut down on water management. Load loss = 80MW.
- 17 20:21 – 20:38Hrs, Mando T/S 90MVA 330/132/13.8kV transformer T2A/75MX 330kV Reactor 3R3 common CB was opened to switched off 75MX reactor on voltage control . No load loss as the transformer was on soak. V/P: 304/310kV.

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

**SHIRO**

- 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 Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.

**BENIN REGION:**

- 1 Omotosho 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(C) LAGOS REGION**

- 1 Agbara/Ojo 132kV line 1 on soak from Agbara end.

**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.

**LAGOS REGION**

- 1 Omotosho/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/tire 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 (E) UNAVAILABLE SYNCHROSCOPES :**

- 1 Benin, Ikeja West, Onitsha, Egbin, Uguwaji, Osogbo, Kaduna, Jos, Gwagwalada & Alaoji 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





