

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF THURSDAY 07/06/2018

FOR: EVENTS OF WEDNESDAY 06/06/2018

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	06/06/2018
GENERATION CAPABILITY	7406.6	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5155.1	-do-	-do-
PEAK GENERATION	4610.4	-do-	-do-
LOWEST GENERATION	2891.4	12:00	06/06/2018
8-HOURLY DURATION PEAK	3604.5	0100-0800	-do-
	3525.4	0900-1600	-do-
	4610.4	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	356	Birnin-Kebbi/Omotosho T/S	02:00 & 12:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso, Gombe & Yola T/S	09:00, 13:00 & 13:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.68	02:27
LOWEST FREQUENCY	49.85	19:42

1.4 SYSTEM COLLAPSE UP DATE

		No. of days since last total collapse: 117												Total
Date of last total collapse: 1st Feb., 2018														
Date of last partial collapse: 12 <sup>th</sup> April., 2018		No. of days since last partial collapse: 53												
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	
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	179	124
2 JEBBA	HYDRO	251	150
3 SHIRORO	HYDRO	363	111
4 EGBIN ST2 - 5	STEAM	463	411
5 SAPELE	STEAM	0	0
6 DELTA	GAS	570	323
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	305	139
9 OMOTOSHO GAS	GAS	139.3	111.4
10 OLORUNSOGO GAS	GAS	136.5	111.9
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	215.1	88.8
13 ALAOJI NIPP	GAS	86.1	87.5
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	218.7	91.7
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	105.1	81.9
18 OKPAI	GAS	261	151
19 AFAM VI	GAS	548	498
20 IBOM POWER	GAS	92.5	82.5
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	43.3	41.9
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	461	125
27 EGBIN ST6	(GAS)	101	101
28 PARAS ENERGY	(GAS)	71.8	60.8
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4610.4</b>	<b>2891.4</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	3395.00	141.46	3381.30	140.89
2 JEBBA	HYDRO	4376.00	182.33	4356.84	181.54
3 SHIRORO	HYDRO	7440.00	310.00	7411.65	308.82
4 EGBIN ST2 - 5	STEAM	10193.00	424.71	9704.30	404.35
5 SAPELE	STEAM	364.40	15.18	359.50	14.98
6 DELTA	GAS	11225.47	467.73	11155.60	464.82
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	5274.10	219.75	5245.13	218.55
9 OMOTOSHO GAS	GAS	3294.00	137.25	3269.60	136.23
10 OLORUNSOGO GAS	GAS	2950.94	122.96	2920.94	121.71
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	3256.28	135.68	3237.85	134.91
13 ALAOJI NIPP	GAS	2125.69	88.57	2103.39	87.64
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	3097.60	129.07	3065.10	127.71
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2330.00	97.08	2309.43	96.23
18 OKPAI	GAS	5284.00	220.17	5219.90	217.50
19 AFAM VI	GAS	12562.79	523.45	12318.49	513.27
20 IBOM	GAS	1842.65	76.78	1835.00	76.46
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	4718.30	196.60	4711.20	196.30
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1052.40	43.85	1034.02	43.08
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	2406.00	100.25	2279.80	94.99
28 PARAS ENERGY	GAS	1671.30	69.64	1662.80	69.28
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>88,859.92</b>	<b>3,702.50</b>	<b>87,581.84</b>	<b>3,649.24</b>

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

	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	137	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	161	2G2-4 - Out on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	420	420	411G1, 2 & 4 3	420	298	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	537	537	ST3 - Out on high vibration since 19th June 2017.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Out on low drum level. ST2 - Shut down due to tripping of generator transformer. 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, 16, 18 & 19 10	463	433	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. 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	GT11 - 13 3	435	189	Generation reduced due on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 6 - 8 4	152	143.1	GT1, 3 - 5 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 6 & 8 4	152	139.7	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	176.9	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	120	86.9	GT1 & 2 - Out due to low gas pressure. 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	170	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	86.4	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	229	ST18 - Out due to water shortage.
	AZURA - EDO	3	GT11 - 13 3	459	459	GT11 - 13 3	459	381	Available units on bar.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 - 13 & ST10 4	640	542	Available units on bar.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	70.9	GT1 & 2 - Out on fault. 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	GT2 & 5 2	44.8	44.8	GT2 & 5 2	44.8	44.8	GT1 - Out on fault. 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>131</b>	<b>78</b>	<b>7893.3</b>	<b>7303.8</b>	<b>50</b>	<b>4792.8</b>	<b>3825.7</b>	Frequency = 50.35Hz.	

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

FEEDER	MAX. LOAD (MW)	TIME (HRS)	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY			
U-STEEL	1	0700HRS	24
PTCEXPRESS	10	1800HRS	15
SANKYO	ON	0100HRS	24
FEEDER 8	17	1100HRS	24
IKORODU			
PULK IT	4	0900HRS	24
INDUSTRIAL	19	090HRS	24
SPINTEX	9	1700HRS	24
DANGOTE	1	0100HRS	24
LAND CRAFT	16	0100HRS	24
ALAUUSA			
TR4 15MVA	8.3	16;00	24
TR5 -15MVA	6	09;00	24
ALAUUSA	16.2	15;00	24
MLAND			
PTC (MARYLAND)	15	1800HRS	22
LORDSMITH (PAPALANTO)	0.4	0100HRS	24
<b>TOTAL LOAD</b>	<b>122.9</b>		

1.7C BILATERAL AGREEMENT UNITS DISPATCH - WEDNESDAY 06/06/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY			
U-STEEL	1	0700HRS	24
PTCEXPRESS	10	1800HRS	15
SANKYO	ON	0100HRS	24
FEEDER 8	17	1100HRS	24
IKORODU			
PULK IT	4	0900HRS	24
INDUSTRIAL	19	090HRS	24
SPINTEX	9	1700HRS	24
DANGOTE	1	0100HRS	24
LAND CRAFT	16	0100HRS	24
ALAUUSA			
TR4 15MVA	8.3	16;00	24
TR5 -15MVA	6	09;00	24
ALAUUSA	16.2	15;00	24
MLAND			
PTC (MARYLAND)	15	1800HRS	22
LORDSMITH (PAPALANTO)	0.4	0100HRS	24
<b>TOTAL LOAD</b>	<b>122.9</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	22:00	24	Nil

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

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	8.9	13:00	24	NIL
KAM INTEGRATED		15	1.8	13:00	24	NIL
OLAM FLOUR MILLS		3	1.4	13:00	24	NIL
LORDSMITH		3	0.5	01:00	24	NIL

**1.8 HYDROLOGICAL DATA: THURSDAY 07/06/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	131.19	99.85	359.98
TAIL WATER ELEVATION (METERS)	101.88	73.0	272
GROSS OPERATING HEAD (METERS)	<b>29.31</b>	<b>26.85</b>	<b>88.48</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	498.00	779.00	649.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>498</b>	<b>779</b>	<b>649</b>
COMPUTED INFLOW (M3/SEC)	89.00	623.00	92.00
STORAGE DIFFERENTIAL	<b>-409.00</b>	<b>-156</b>	<b>-557</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 WEDNESDAY 06/06/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	494.1	22:00	468.82	100.6	03:00
EKO	461.3	06:00	546.43	154.1	12:00
IKEJA	645.2	22:00	611.5	384.9	13:00

**2.0 GAS POSITION: THURSDAY 07/06/2018**

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		537	563
DELTA (GAS)	412	915		465	450
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		0	720
AFAM IV-V	0	300		0	300
AFAM VI	516	650		640	10
GEREGU GAS	261	435		290	145
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	226	480		300	180
ALAQJI 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>3346</b>	<b>5888.8</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : WEDNESDAY 06/06/2018**

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum			
AVERAG			

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 07/06/2018 = 0MW. FREQUENCY 50.35Hz.**

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	Omosho NIPP	GT2	40	0	0
		GT3		0	
		GT4		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 07/06/2018 as at 0600Hrs was = 2744.1MW.

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	Omosho NIPP GT4	120	0	120	1949
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	Omosho 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	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1570.34MMSCF OF GAS (EQUIVALENT TO 5888.8MW 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	84.1
2	Ibom GT3	115	70.9	44.1	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Geregu Gas GT11 - 13	435	189	246	346
2	Delta GT20	100	0	100	
				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>2744.1</b>

**5.0 OUTAGES:**

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

- 1 04:52 through 24:00Hrs, Omoku P/S GT6 tripped due to low lube oil pressure. LHR = 21.9MW.
- 2 15:41 – 18:46Hrs, Geregu Gas GT13 tripped on flame monitor indication. LHR = 137MW.

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

- 1 03:44 - 03:53Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Siemens Relay: O/C Red Phase. LHR = 63.1MW.
- 2 16:18 – 16:51Hrs, Benin/Delta 132kV line CBs tripped at both ends on the following relay indications:  
**At Benin T/S:** O/C Phase A, Distance = 31.7km, FCT = 23ms, zone 1.  
**At Delta T/S:** Main distance protection O/C Red Phase, Back up protection E/F. LHR = 38.7MW.
- 3 16:19 – 16:39Hrs, Alaoji/Umuahia 132kV line 1 CB tripped at Alaoji T/S on Micom relay Z1, Z2, Z3, started Phase AC-N, distance start Z1, Z2, Z3, distance trip Z1, O/C start >12, O/C trip >2, E/F start >2, E/F trip IN>2, fault duration = 64ms, fault location = 22.04km, 2x3Phase trip. No load loss as the line was on soak.

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

- 1 09:32 – 17:10Hrs, Benin/Delta 132kV line was taken out to enable maintenance crew carry out trace clearing and annual preventive maintenance on the CB. Load loss = 19.2MW.
- 2 11:51 – 12:42Hrs, Shagamu/Ijebu-Ode 132kV line was taken out at Shagamu T/S to transfer load from reserve bus to the main bus for maintenance crew to install a new 60MVA 132/33kV transformer. Load loss = 0.1MW.
- 3 14:09 through 24:00Hrs, Ayede T/S 150MVA 330/132/33kV transformer T2A was taken out to enable maintenance crew replace its defective primary isolator with new one. No load interruption as load was transferred to 150MVA transformer T1A.

**5(D) URGENT OUTAGES:**

- 1 09:36 - 13:12Hrs, Birnin-Kebbi/Sokoto 132kV line CB was taken out at Sokoto T/S due to fault on the auxiliary LVAC CB #67x105. Load loss = 12MW.
- 2 14:00 – 15:00Hrs, Apir T/S 60MVA 132/33kV transformer T012 was taken out to enable maintenance crew check and rectify why the transformer primary CB flagged on O/C & E/F relay but did not trip. Load loss = 14MW.
- 3 11:43 – 14:40Hrs, Agbara/Ojo 132kV line 2 was taken out at Agbara T/S to mend cut Red Phase down dropper conductor. No load interruption as the load was transferred to Akangba T/S.
- 4 13:08 – 14:11Hrs, Alagbon T/S 66MVA 132/33kV transformer TR1 was taken out to seal oil leakage on the Yellow Phase CT. Load loss = 21MW.
- 5 19:47 through 24:00Hrs, Sapele Steam ST02 was shut down due to tripping of generator transformer. LHR = 57MW.

**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, 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).

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

**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 Akangba, Osogbo & New Haven.

**7 INTERNATIONAL LINES:-**

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

Maximum load - 289MW at 20:00Hrs.  
Minimum load - 232MW at 14:00Hrs.

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

Maximum load - 101.0MW at 13:00Hrs.  
Minimum load - 77.0MW at 07:00Hrs.

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

Maximum load - 48.2MW at 13:00Hrs.  
Minimum load - 34.1MW at 12:00Hrs.

**8 MISCELLANEOUS:-**

- 1 00:18 - 16:10Hrs, Delta GT18 was shut down on frequency management. Load loss = 76MW.
- 2 00:25 - 00:50Hrs, Mando T/S 90MVA 330/132/13.8kV transformer T2A primary CB was taken out to restore 330kV 75MX Reactor R1 to service. No load loss as the transformer was on soak.
- 3 00:48 - 18:53Hrs, Delta GT16 was shut down on frequency management. Load loss = 80MW.
- 4 02:36 - 16:06Hrs, Geregu Gas GT12 was shut down on frequency management. Load loss = 30MW.
- 5 02:45Hrs, Ihovbor NIPP GT1 was shut down on frequency management. Load loss = 71.2MW.
- 6 02:46Hrs, Olorunsogo Gas GT1 was shut down on frequency management. Load loss = 28MW.
- 7 02:49Hrs, Omotosho NIPP GT4 was shut down on frequency management. Load loss = 90.9MW.
- 8 02:51Hrs, Omotosho Gas GT1 was shut down on frequency management. Load loss = 32.8MW.
- 9 03:03 - 15:17Hrs, Sapele NIPP GT1 was shut down on frequency management. Load loss = 32.8MW.

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	8	11
132kV	102	85	17

- 10 12:00Hrs, Omotosho Gas GT2 was tied to swap with GT1
  - 11 12:24Hrs, Omotosho Gas GT1 was shut down. No load loss as 33.8MW was transferred to GT2
  - 12 12:35Hrs, Sapele Steam ST02 was tied. The unit was out on instrument air compressor low
  - 13 11:26Hrs, Ugwuaji T/S 150MVA 330/132/34.5kV transformer T01 was restored. The transformer was out on fault.
  - 14 14:40Hrs, Alaoji T/S 150MVA 330/132/33kV transformer T3A was restored. The transformer was out on maintenance.
  - 15 16:33Hrs, Lekki/Alagbon 330kV line was restored. The line was out on maintenance.
  - 16 17:32Hrs, Azura P/S GT13 was tied. The unit was out due to line constraint.
  - 17 18:16Hrs, Jebba 2G3 was tied. The unit was out on water management.
  - 18 19:07Hrs, Azura GT12 was tied. The unit was out due to loss of auxiliary.
  - 19 19:04Hrs, Mando T/S 75MX 330kV Shunt Reactor 3R3 was switched off on voltage control. Voltage profile: 312/319kV.
  - 20 19:20Hrs, Omotosho Gas GT7 was tied. The unit was out due to gas constraint.
  - 21 19:52Hrs, Omotosho NIPP GT2 was tied. The unit was out due to gas constraint.
  - 22 20:14Hrs, Katampe T/S 75MX 330kV Reactor R1 was switched off on voltage control. Voltage profile: 319/323kV.
- \*\*\*\*\* **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)
- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- 1 Otta/Ogba 132kV line isolator - defective control shaft.
- 1 Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole
- 1 Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- 1 Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- 1 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.
- 1 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.
- 1 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.
- 1 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.
- 1 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 1 330kV Ikeja West/Osogbo line. - 95 spans.
- 1 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 1 Ikeja West/Akangba 330kV line 2 - 1 span.
- 1 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 1 Akangba/tire 132kV lines 1 & 2 - 1 span.
- 1 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 1 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
- 1 Minna T/S 132kV Bida line - 32 spans
- 1 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



