

# TRANSMISSION COMPANY OF NIGERIA

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

**DAILY OPERATIONAL REPORT OF SUNDAY 08/04/2018**

**FOR: EVENTS OF SATURDAY 07/04/2018**

**1.0 EXECUTIVE OPERATIONS SUMMARY:**

**1.1 GENERATION PROFILE: NATIONAL STATISTICS**

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,030	22:00	07/04/2018
GENERATION CAPABILITY	7944.1	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5374.1	-do-	-do-
PEAK GENERATION	4653.1	-do-	-do-
LOWEST GENERATION	3414.8	09:00	07/04/2018
8-HOURLY DURATION PEAK	3887.9	0100-0800	-do-
	3792.6	0900-1600	-do-
	4653.1	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	358	Omotosho T/S	07:00
LOWEST VOLTAGE FOR THE DAY	299	Akangba T/S	21:00

## 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.582	08:08
LOWEST FREQUENCY	50.180	18:20

## 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 60											
Date of last partial collapse: 17 <sup>th</sup> Oct., 2017		No. of days since last partial collapse: 162											
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	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	2	--	1	20
2011	Total	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	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	4	2	22
	Partial	--	--	--	--	--	--	--	2	--	--	--	2
2014	Total	2	--	--	2	0	3	1	0	0	1	0	9
	Partial	--	--	0	0	1	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	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	2	2	22
	Partial	--	--	1	0	1	3	1	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										6
	Partial												0

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	355	199
2 JEBBA	HYDRO	252	228
3 SHIRORO	HYDRO	135	138
4 EGBIN ST2 - 5	STEAM	600	410
5 SAPELE	STEAM	0	0
6 DELTA	GAS	578	292
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	244	202
9 OMOTOSHO GAS	GAS	173.2	173.5
10 OLORUNSOGO GAS	GAS	134.1	134.4
11 GEREGU NIPP	GAS	227	166
12 SAPELE NIPP	GAS	174.1	109.3
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	103	90.2
16 ODUKPANI NIPP	GAS	325.6	276.6
17 IHOVBOR NIPP	GAS	97	96.2
18 OKPAI	GAS	301	155
19 AFAM VI	GAS	556	417
20 IBOM POWER	GAS	76.6	72.1
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	75.7	0.9
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	80	0
26 AZURA - EDO IPP	(GAS)	0	0
27 EGBIN ST6	(GAS)	0	111
28 PARAS ENERGY	(GAS)	68.6	67.8
29 GBARAIN NIPP	GAS	91.2	73.8
<b>TOTAL</b>		<b>4653.1</b>	<b>3414.8</b>

## 1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	6453.00	268.88	6437.30	268.22
2 JEBBA	HYDRO	5672.00	236.33	5647.48	235.31
3 SHIRORO	HYDRO	3445.00	143.54	3412.67	142.19
4 EGBIN ST2 - 5	STEAM	13478.00	561.58	12802.80	533.45
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	11103.01	462.63	10935.70	455.65
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	5361.50	223.40	5334.89	222.29
9 OMOTOSHO GAS	GAS	4160.00	173.33	4126.80	171.95
10 OLORUNSOGO GAS	GAS	3182.59	132.61	3155.33	131.47
11 GEREGU NIPP	GAS	4635.88	193.16	4616.66	192.36
12 SAPELE NIPP	GAS	3350.70	139.61	3327.59	138.65
13 ALAQJI 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	2213.40	96.39	2294.10	95.59
16 ODUKPANI NIPP	GAS	6967.90	290.33	6928.40	288.68
17 IHOVBOR NIPP	GAS	2320.00	96.67	2306.17	96.09
18 OKPAI	GAS	4594.00	191.42	4433.90	184.75
19 AFAM VI	GAS	10794.97	449.79	10543.31	439.90
20 IBOM	GAS	1581.49	65.90	1573.00	65.54
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	1063.65	44.32	1060.90	44.20
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1414.40	58.93	1376.18	57.34
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	737.90	30.75	735.90	30.66
27 EGBIN ST6	STEAM	1306.00	54.42	1288.20	53.68
28 PARAS ENERGY	GAS	1633.70	68.07	1625.40	67.73
29 GBARAIN NIPP	GAS	2004.20	83.51	1987.50	82.81
<b>TOTAL</b>		<b>97,573.29</b>	<b>4,065.55</b>	<b>95,950.18</b>	<b>3,997.92</b>

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 08/04/2018

	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, 11 & 12 4	440	370	1G5, 6, 11 & 12 4	370	136	1G5, 6, 11 & 12 - Generation reduced on frequency management. 1G7 - Out on stator winding failure. 1G8 - Out due to loss of supply to the auxiliary. 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.
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1,4 & 5 3	285	209	2G2 & 3 - Out on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G2 1	150	150	411G2 1	110	110	Available unit on bar.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	880	ST1, 2, 4 & 5 4	600	537	ST3 - Tripped on high vibration since 19th June 2017.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Tripped on low drum level. ST2 - Shut down for maintenance. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9 - 13, 16 & 18 - 20 10	520	520	GT7, 9 - 13 & 18 - 20 9	420	278	GT3 & 5 - Out due to generator winding fault. GT4 - Shut down due to vibration problem. GT6 & 14 - Out on major overhaul. GT15 - Out on maintenance. GT16 - Out on frequency management. GT17 - Out on excitation trouble.
	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 - Tripped on loss of excitation. GT18 - Out on 4000Hrs inspection and maintenance since 04/04/2018. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 & 13 2	290	200	GT12 - Out due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 3, 4, 6 & 8 5	190	182.4	GT1, 5 & 7 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 6 & 8 4	152	134	GT1, 3, 5 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT22 & 23 2	290	206	GT21 - Out on maintenance. GT22 - Generation reduced on frequency management.
	SAPELE NIPP	4	GT1 1	115	115	GT1 1	115	49.7	GT1 - On frequency response. GT2 & 3 - Out due to high air inlet differential pressure. GT4 - Tripped on fire protection alarm.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Tripped 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	GT2 1	120	71	GT1 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT3, 4 & 5 3	360	345	GT4 & 5 2	230	157.8	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on frequency management.
	IHOVBOR NIPP	4	GT1 & 3 2	230	220	GT3 1	110	76.8	GT1 - Out due to gas constraint. GT2 - Out due to gas outlet valve problem. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	88.9	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT12 1	150	150	GT12 1	150	79	GT11 & ST18 - Out on maintenance.
	AZURA - EDO	3	GT11 & 13 2	300	300	0 0	0	0	GT12 - Awaiting commissioning. GT11 & 13 - Shut down after test.
	AFAM VI GAS/STEAM	4	GT11- 13 & ST10 4	650	650	GT11, 13 & ST10 3	500	428	GT12 - Out on frequency management. ST10 - Generation reduced on Afam VI management decision.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	52.2	GT1 & 2 - Out on fault.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	1	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	66.3	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	TRANS-AMADI	4	GT1 & 2 2	50	40	0 0	0	0	GT1 & 2 - Out due to line constraint. GT3 - Out on fault. GT4 - Tripped on generator differential lockout.
	RIVERS	1	GT1 1	180	160	GT1 1	50	50	GT1 - Generation reduced on frequency management.
	<b>SUB TOTAL</b>	<b>130</b>	<b>76</b>	<b>7349.5</b>	<b>7095.5</b>	<b>50</b>	<b>4289.5</b>	<b>3112.1</b>	Frequency = 50.86Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 08/04/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	0	0	0	0	0	0	ST6 - Shut down to clean condenser.
		0			0			
PARAS ENERGY	8	GT2 - 9	72	67	GT2 - 9	67	67	Available units on bar.
		8			8			
<b>SUB TOTAL</b>	<b>9</b>	<b>8</b>	<b>72</b>	<b>67</b>	<b>8</b>	<b>67</b>	<b>67</b>	
<b>GRAND TOTAL</b>	<b>139</b>	<b>84</b>	<b>7421.5</b>	<b>7162.5</b>	<b>58</b>	<b>4,356.50</b>	<b>3,179.10</b>	Frequency = 50.86Hz.

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1.7C BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 07/04/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY				

	FEEDER	MAX. LOAD (MW)	TIME (HRS)		REMARK
OGBA	U-STEEL	ON	0100HRS	24	NIL
	PTCEXPRESS	10	1600HRS	24	NIL
	SANKYO	ON	0100HRS	24	NIL
	FEEDER 8	14	1200HRS	24	NIL
KORODU	PULK IT	3	0200HRS	24	NIL
	INDUSTRIAL	19	2200HRS	24	NIL
	SPINTEX	6	0100HRS	24	NIL
	DANGOTE	2	0700HRS	24	NIL
	LAND CRAFT	16	0300HRS	24	NIL
ALABIA	TR4 15MVA	6.3	2000HRS	24	NIL
	TR5 -15MVA	4.3	1500HRS	0:00	NIL
	ALAUISA	13.8	1300HRS	24	NIL
MLAND	PTC (MARYLAND)	16	1300HRS	13	3 PHASES
	<b>TOTAL LOAD</b>	<b>110.4</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	69.4	23:00	24	NIL

1.8 HYDROLOGICAL DATA: SUNDAY 08/04/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	136.74	99.89	370.28
TAIL WATER ELEVATION (METERS)	102.02	73.6	270.00
GROSS OPERATING HEAD (METERS)	34.72	26.29	100.28
AVERAGE TURBINE DISCHARGE (M3/SEC)	864.00	1005.00	155.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	864	1005	158
COMPUTED INFLOW (M3/SEC)	170.00	843.00	0.00
STORAGE DIFFERENTIAL	-694.00	-162	-158
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 SATURDAY 07/04/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	540.50	571.37	22:00	377.7	07:00
EKO	483.5	12:43	24:00	385.7	07:00
IKEJA	663.7	6:14	23:00	434.6	06:00

2.0 GAS POSITION: SUNDAY 08/04/2018

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	537	1100		600	500
DELTA (GAS)	278	915		420	495
OMOTOSHO GAS	182.4	336.8		190	146.8
OMOTOSHO NIPP	71	500		120	380
OLORUNSOGO (GAS)	134	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	49.7	500		115	385
SAPELE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	428	650		500	150
GEREGU GAS	200	435		290	145
GEREGU NIPP	206	435		290	145
OKPAI (GAS/STEAM)	78	480		78	401
ALAQJI NIPP	0	504		0	504
IHOVBOR NIPP	76.8	450		110	340
IBOM	52.2	198		115	83
ODUKPANI NIPP	157.8	625		230	395
<b>TOTAL</b>	<b>2451.9</b>	<b>10626.59</b>		<b>3211</b>	<b>6023.8</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 07/04/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 08/04/2018 = 0MW. FREQUENCY 50.86HZ.

S/N	POWER STATION	UNIT ON SPINNING RESERVE	CONTRACTED RESERVE	ACTUAL RESERVE (MW)	TOTAL (MW)
1	Egbin	ST2	100	0	0
		ST4		0	
		ST6		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	Geragu NIPP	GT22	35	0	0
5	Omotosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

4.0 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Sunday 08/04/2018 as at 0600Hrs was = 2452.5MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNUTILIZED GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Omotosho NIPP GT1 & 4	240	0	240	1483.5
2	Ihovbor GT1	112.5	0	112.5	
3	Alaqji NIPP GT1, 2 & 4	360	0	360	
4	Olorunsogo Gas GT1,3, 5 & 7	152	0	152	
5	Olorunsogo NIPP GT1 - 3	360	0	360	
6	Omotosho gas GT1, 5 & 8	114	0	114	
7	Geragu Gas GT12	145	0	145	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1606.34MMSCF OF GAS (EQUIVALENT TO 6023.8MW) 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	40
				0	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Kainji (GS, 6, 11 & 12)	270	136	234	739
2	Delta GT7, 9 - 13 & 16	220	90	130	
3	AFAM VI GT12	150	0	150	
4	Odukpani NIPP GT3	115	0	115	
5	Rivers IPP GT1	160	50	110	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Jebba 2G2 & 3	190	0	190	190
<b>Grand Total</b>					<b>2452.5</b>

5.0 **OUTAGES:-**

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

- 1 02:02 - 17:41Hrs, Rivers GT1 tripped on over speed. LHR = 150MW
- 2 08:52Hrs, Omoku GTs 1, 2, 5 & 6 tripped on reverse power due to tripping of Alaoji/Afam 132kV line 2. LHR = 70MW  
12:35Hrs - GT2 was tied, 12:36Hrs - GT5 was tied & 18:32Hrs - GTs1 & 6 were tied.

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

- 1 02:01 – 02:33Hrs, Alaoji NIPP/Alaoji T/S 330kV line 1 (cct L7A) CB tripped at Alaoji NIPP on line differential protection – Main fault type AB-G. No load interruption as Alaoji NIPP was not generating
- 2 02:06 – 02:30Hrs, Afam/Rivers IPP 132kV line 2 CBs tripped at both ends on the following relay indications:  
**At Afam T/S:** O/C & E/F  
**At Rivers IPP T/S:** Distance protection, E/F, PU, O/C L1,L2 & L3, differential trip, distance = 3.3km. LHR = 112.4MW
- 3 06:25 – 06:43Hrs, Akangba/Ojo 132kV line 1 CB tripped at Akangba T/S on O/C Phases AB&C, fault location = 49km. LHR = 49MW
- 4 08:52 – 09:16Hrs, Alaoji/Afam 132kV line 2 tripped at Afam T/S on O/C 3 phases. LHR = 28.6MW
- 5 17:11 – 17:45Hrs, New Haven/Yandev 132kV line CB tripped at New Haven T/S on O/C starting JA, JT, auxiliary starting R, S, T & neutral M Backup relay – instantaneous O/C & E/F 3-Phases. LHR = Nil.

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

- 1 09:04 – 16:28Hrs, Mando/Kaduna Town 1 132kV lines 1 & 2 were taken out to allow LMD crew replace the ACSR conductor with ACC conductor along the line. Load loss = 25MW.

5(D) **URGENT OUTAGES:**

- 1 05:37 through 24:00Hrs, Sapele NIPP GT3 was shut down due to high air inlet differential pressure. Load loss = 49.3MW
- 2 09:30 – 13:50Hrs, Gusau T/S 30MVA 132/33kV transformer was taken out to enable maintenance crew seal point of oil leakage on the transformer. Load loss = 18MW.
- 3 10:34 – 11:26Hrs, Shiroro/Abuja 330kV line (cct R4B) CB #3514 was taken out at Shiroro T/S to enable maintenance crew build up low SF6 gas of the GCB to normal. No load interruption as the tie CB was in service.
- 4 12:36 through 24:00Hrs, Egbin ST6 was shut down for cleaning of condenser, 110MW was transferred to ST4

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 GENERATOR 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 CONTACTED 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	33
OPTIC FIBRE	13	10
PLS	14	5

11 (B) **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	6	13
132kV	102	77	25

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

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts J2H & 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 U1A & S5B.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J, A2K & F1K.

6 **WEATHER REPORT:-** Rainfall was reported in Osogbo, Alaoji, Benin, Lokoja.

7 **INTERNATIONAL LINES:-**

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

Maximum load - 249MW at 22:00Hrs.  
Minimum load - 166MW at 08:00Hrs.

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

Maximum load - 102MW at 23:00Hrs.  
Minimum load - 71MW at 08:00Hrs.

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

Maximum load - 39.7MW at 21:00Hrs.  
Minimum load - 27.0MW at 06:00Hrs.

8 **MISCELLANEOUS:-**

- 1 00:41 - 19:22Hrs, Delta GT19 was shut down on frequency management. Load loss = 55MW
  - 2 00:45Hrs, Afam VI GT12 was shut down on frequency management. Load loss = 112MW
  - 3 03:29Hrs, Geregu gas generation reduced by 30MW. Frequency was 50.50Hz
  - 4 03:36Hrs, Geregu NIPP generation reduced by 30MW. Frequency was 50.50Hz
  - 5 06:33Hrs, Benin T/S 75MX 330kV Shunt Reactor 6R2 was placed in service on voltage control. V/P = 347/343kV
  - 6 06:45Hrs, Ugwuaji/Makurdi 330kV line 1 (cct U1A) was taken out on voltage control. V/P = 353/348kV
  - 7 11:23 - 18:46Hrs, Azura-Edo GT12 was tied for test.
  - 8 11:36Hrs, Egbin ST4 was tied to swap with ST6.
  - 9 14:50 - 17:27Hrs, Azura-Edo GT13 was tied for test.
  - 10 14:34Hrs, Sapele/Delta 330kV line (cct S4G) was restored. The line was out on fault.
  - 11 13:44Hrs, Ayede T/S 100MVA 132/33kV transformer T1 was restored. The transformer was out on fault.
  - 12 17:35Hrs, Adiabior T/S 150MVA 330/132/33kV transformer T2 was restored. The transformer was out on fault.
  - 13 18:20Hrs, Okpai GT12 was tied. The unit was out on maintenance.
  - 14 18:39Hrs, Delta GT16 was tied. The unit was out on frequency management.
  - 15 18:41Hrs, Sapele NIPP GT4 was tied. The unit was out on fault.
  - 16 19:33Hrs, Afam VI GT12 was tied. The unit was out on frequency management.
  - 17 19:52Hrs, Makurdi T/S 330kV 75MX Shunt Reactor R1 was taken out on voltage control. Voltage profile: 308/321kV.
  - 18 23:30Hrs, Delta GT16 was shut down on frequency management. Load loss = 85MW.
- \*\*\*\*\* **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:**

**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-Ekperne 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 Egbir/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 330kV T/S, 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) LAGOS REGION**

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

**12(E) 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.

**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/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 (G) UNAVAILABLE SYNCHROSCOPES :**

- 1 Benin, Ikeja West, Onitsha, Egbin, Ugwuaji, 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





