

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

## DAILY OPERATIONAL REPORT OF WEDNESDAY 10/01/2018

FOR: EVENTS OF TUESDAY 09/01/2018

### 1.0 EXECUTIVE OPERATIONS SUMMARY:

#### 1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	20,550	22:00	09/01/2018
GENERATION CAPABILITY	7111.2	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5234.2	-do-	-do-
PEAK GENERATION	4363.1	-do-	-do-
LOWEST GENERATION	2800.7	01:00	09/01/2018
8-HOURLY DURATION PEAK	3963.9	0000-0800	-do-
	4028.3	0900-1600	-do-
	4363.1	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	368	Omotosho T/S	13:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe T/S	02:00

#### 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.73	13:05
LOWEST FREQUENCY	49.54	03:24

#### 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8 <sup>th</sup> Jan., 2018						No. of days since last total collapse: 02											
Date of last partial collapse: 17 <sup>th</sup> Oct., 2017						No. of days since last partial collapse: 82											
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	Jan	Feb	Total		
2010	Total	--	3	1	--	3	3	--	2	2	1	4	1	4	22		
	Partial	1	--	--	1	3	4	4	3	2	--	1	1	20			
2011	Total	--	--	--	--	3	1	1	1	2	1	--	--	13			
	Partial	--	1	1	--	--	--	1	--	1	2	--	--	8			
2012	Total	--	2	1	5	2	1	--	--	2	2	1	1	16			
	Partial	--	2	3	--	--	--	--	1	--	1	1	1	8			
2013	Total	--	1	2	2	3	4	1	1	1	4	2	2	22			
	Partial	--	--	--	--	--	--	--	2	--	--	--	--	2			
2014	Total	2	--	--	0	3	1	0	0	1	0	0	0	9			
	Partial	--	0	0	1	0	0	0	0	0	2	1	1	4			
2015	Total	1	0	1	0	2	0	1	0	0	1	0	0	6			
	Partial	--	--	1	0	2	0	0	1	0	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	0	0	15			
	Partial	1	0	1	0	0	1	0	0	3	3			9			
2018	Total	2												2			
	Partial																

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)	
1	KAINJI	HYDRO	397	363
2	JEBBA	HYDRO	179	0
3	SHIRORO	HYDRO	200	275
4	EGBIN ST2 - 5	STEAM	245	60
5	SAPELE	STEAM	0	0
6	DELTA	GAS	433	472
7	AFAM IV-V	GAS	62	41
8	GEREGU GAS	GAS	415	60
9	OMOTOSHO GAS	GAS	107.9	72.9
10	OLORUNSOGO GAS	GAS	201	0
11	GEREGU NIPP	GAS	202	168
12	SAPELE NIPP	GAS	184.7	154.8
13	ALAQJI NIPP	GAS	0	0
14	OLORUNSOGO NIPP	GAS	0	0
15	OMOTOSHO NIPP	GAS	105.9	0
16	ODUKPANI NIPP	GAS	229.7	311.6
17	IHOVBOR NIPP	GAS	95.5	78.7
18	OKPAI	GAS	289	244
19	AFAM VI	GAS	394	110
20	IROM POWER	GAS	108.4	100.1
21	ASCO	GAS	0	0
22	A.E.S	GAS	0	0
23	OMOKU	GAS	9	61.1
24	TRANS AMADI	GAS	0	0
25	RIVERS IPP	(GAS)	155	0
26	AZURA - EDO IPP	(GAS)	0	0
27	EGBIN STR	(GAS)	177	205
28	PARAS ENERGY	(GAS)	70.2	23.5
29	GBARAIN NIPP	GAS	101.8	0
TOTAL		4363.1	2800.7	

#### 1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT		
		MWH	MWH/H	MWH	MWH/H	
1	KAINJI	HYDRO	9118.00	379.92	9102.40	379.27
2	JEBBA	HYDRO	2605.00	108.54	2583.36	107.64
3	SHIRORO	HYDRO	6576.00	274.00	6548.14	272.84
4	EGBIN ST2 - 5	STEAM	4620.00	192.50	4373.40	182.23
5	SAPELE	STEAM	0.00	0.00	0.00	0.00
6	DELTA	GAS	7812.38	325.52	7774.00	323.92
7	AFAM IV-V	GAS	1355.00	56.46	1350.99	56.29
8	GEREGU GAS	GAS	7611.70	317.15	7582.02	315.92
9	OMOTOSHO GAS	GAS	2402.00	100.08	2380.80	99.20
10	OLORUNSOGO GAS	GAS	2278.05	94.92	2256.82	94.03
11	GEREGU NIPP	GAS	4628.38	192.85	4611.42	192.14
12	SAPELE NIPP	GAS	3354.65	139.78	3333.94	138.91
13	AZURA - EDO IPP	GAS	0.00	0.00	0.00	0.00
14	ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
15	OLORUNSOGO NIPP	GAS	554.10	23.09	516.50	21.52
16	OMOTOSHO NIPP	GAS	1868.70	77.86	1846.90	76.95
17	ODUKPANI NIPP	GAS	5818.08	242.42	5786.17	241.09
18	IHOVBOR NIPP	GAS	2125.75	88.57	2112.95	88.04
19	OKPAI	GAS	6286.00	261.92	6124.60	255.19
20	AFAM VI	GAS	8020.57	334.19	7929.00	330.38
21	IROM	GAS	2143.98	89.33	2135.00	88.56
22	ASCO	GAS	0.00	0.00	0.00	0.00
23	A.E.S	GAS	0.00	0.00	0.00	0.00
24	OMOKU	GAS	1484.70	61.86	1452.68	60.53
25	TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26	RIVERS IPP	GAS	2242.46	93.44	2236.80	93.20
27	EGBIN STR	STEAM	4584.00	191.00	4313.80	182.24
28	PARAS ENERGY	GAS	1501.30	62.55	1494.10	62.25
29	GBARAIN NIPP	GAS	1518.30	63.26	1505.10	62.71
TOTAL			90,509.10	3,771.21	89,410.89	3,725.45

1.7A

## GENERATION POSITION AT 06:00HRS OF WEDNESDAY 10/01/2018

	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	440	440	1G5, 6, 11 & 12	440	370	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	475	475	2G1 & 5	190	148	2G2 - 4 - Out on frequency management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G2 & 3	290	290	411G2 & 3	290	200	411G1 - Tripped and the load itself to zero. 411G3 - Generation reduced on frequency management. 411G4 - Out due to radiator problem.
	EGBIN STEAM	5	ST4 & 5	440	440	ST4 & 5	440	231	ST1 - Tripped on generator CB trouble. ST2 - Out on undisclosed fault. ST3 - Tripped on high vibration.
	SAPELE (STEAM)	6	0	0	0	0	0	0	ST1 - Tripped on low drum level. ST2 - Out on 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	GT4, 7, 9-11, 13, 15, 16, 19 & 20	535	535	GT4, 7, 9-11, 13, 15, 16, 19 & 20	535	514	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. GT8 & 18 - Out on maintenance. GT12 - Out on fault. GT17 - Out on excitation trouble.
	AFAM IV & V (GAS)	8	GT18	75	53	GT18	53	53	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Tripped on loss of excitation. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13	435	435	GT11 - 13	435	391	Available units on bar.
	OMOTOSHO GAS	8	GT1 - 8	336	304	GT1, 2, 5 & 6	152	145.1	GT3, 4, 7 & 8 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8	336	304	GT1, 2, 4, 5, 6 & 8	228	201.9	GT3 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23	290	290	GT22 & 23	290	195	GT21 - Out on maintenance. GT22 - Generation reduced due to gas constraint.
	SAPELE NIPP	4	GT1 & 2	225	225	GT1 & 2	225	155.1	GT2 - Generation reduced on frequency management. GT3 - Out on undisclosed fault. GT4 - Tripped on fire protection alarm.
	ALAOJI NIPP GAS	4	GT1 & 2	250	240	0	0	0	GT1 & 2 - Tripped due to low gas pressure. GT3 - Shut down due to generator air inlet filter trouble. GT4 - Out on maintenance.
	OLORUNSOGO NIPP GAS	6	GT1 - 3	360	360	0	0	0	GT1 - 3 - Out due to unavailability of diesel to power the standby diesel generator. GT4 - Out of production since 25/10/2016. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4	375	360	GT1	120	101.2	GT2 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT1, 4 & 5	360	345	GT1 & 4	230	206.2	GT2 - Out due to control system problem. GT3 - Out due to unit transformer problem. GT5 - Out on frequency management.
	IHOVBOR NIPP	4	GT1 - 3	337.5	337.5	GT2	112.5	90.7	GT1 & 3 - Out due to gas constraint. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2	112.5	112.5	GT2	112.5	98.6	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18	375	375	GT11, 12 & ST18	375	276	GT11 - Generation reduced on frequency management. GT12 - Generation reduced due to air inlet differential pressure.
	AZURA - EDO	0	0	0	0	0	0	0	GT11 - Undergoing commissioning tests. GT12 & 13 - Awaiting commissioning.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10	650	650	GT12 & 13	300	280	GT11 & ST10 - Out on frequency management.
	IBOM POWER GAS	3	GT3	115	115	GT3	115	28.8	GT1 & 2 - Out on fault. Generation reduced due to line constraint.
	AES	0	0	0	0	0	0	0	Out of production since 27/09/2014.
	ASCO	0	0	0	0	0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2, 5 & 6	100	80	GT1, 2, 5 & 6	80	60.3	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. Generation reduced due to gas constraint.
	TRANS-AMADI	4	0	0	0	0	0	0	GT1 & 4 - Station shut down due to fatal accident on 1st January 2018.
	RIVERS	1	GT1	180	160	GT1	160	120	Available unit on bar.
	<b>SUB TOTAL</b>	<b>126</b>	<b>75</b>	<b>7092</b>	<b>6926</b>	<b>54</b>	<b>4883</b>	<b>3865.9</b>	Frequency = 50.33Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 10/01/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	MAX. LOAD (MW)	ST6		ST6		MAX. LOAD (MW)	HOURS IN SERVICE	REMARK
		TIME (HRS)	HOURS IN SERVICE	TIME (HRS)	HOURS IN SERVICE			
EGBIN	1	1	220	220	1	220	167	Available unit on bar.
PARAS ENERGY	8	GT2 - 9 8	69.4	69.4	GT2 - 9 8	69.4	69.4	Available units on bar.
<b>SUB TOTAL</b>	<b>9</b>	<b>9</b>	<b>289.4</b>	<b>289.4</b>	<b>9</b>	<b>289.4</b>	<b>236.4</b>	
<b>GRAND TOTAL</b>	<b>135</b>	<b>84</b>	<b>7381.4</b>	<b>7215.4</b>	<b>63</b>	<b>5,172.40</b>	<b>4,102.30</b>	Frequency = 50.33Hz.

NB: Observation shows that many stations remove their units from frequency response at 06:00Hrs without instruction from NCC.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 09/01/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	ON	0100HRS	22	SYSTEM OUTAGE
	PTCEXPRESS	5	1800HRS	18	PLANNED OUTAGE AND SYSTEM OUTAGE
	SANKYO	ON	0100HRS	22	SYSTEM OUTAGE
	FEEDER 8	15	0900HRS	21	SYSTEM OUTAGE
IKORODU	PULK IT	2	1400HRS	24	NIL
	INDUSTRIAL	17	1100HRS	24	NIL
	SPINTEX	3	1200HRS	24	NIL
	DANGOTE	5	2200HRS	18	Tripped on E/F.
	LAND CRAFT	39	0700HRS	24	NIL
ALAUJA	TR4 15MVA	6.4	1200HRS	24	NIL
	TR5 -15MVA	5.5	0900HRS	24	NIL
	ALAUJA	16.9	1000HRS	24	NIL
MILAND	PTC (MARYLAND)	18	1300HRS	24	NIL
	<b>TOTAL LOAD</b>	<b>132.8</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CER

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	70.2	10:00	23	Out due to units tripping on fault.

**1.8 HYDROLOGICAL DATA: WEDNESDAY 10/01/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.59	102.89	374.37
TAIL WATER ELEVATION (METERS)	104.80	72.90	270.50
GROSS OPERATING HEAD (METERS)	36.79	29.99	103.87
AVERAGE TURBINE DISCHARGE (M3/SEC)	1136.00	482.00	298.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1136	482	298
COMPUTED INFLOW (M3/SEC)	1136.00	910.00	41.00
STORAGE DIFFERENTIAL	0.00	428	-257
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 TUESDAY 09/01/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	470.40	14:00	490	164.4	01:00
EKO	481.9	16:00	350	148.7	01:00
IKEJA	528.0	12:00	400	94.5	01:00

**2.0 GAS POSITION: WEDNESDAY 10/01/2018**

STATION	SIGNED ACO Annual Contracted Quantity MMSCF/D	NGC DECLARED QUANTITY (MMS317.578CF/D)	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCF/D)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EOBIN P/S	231		1100		660	440
DELTA (GAS)	514		915		555	360
OMOTOSHO GAS	145.1		336.8		152	184.8
OMOTOSHO NIPP	101.2		500		120	380
OLORUNSOGO (GAS)	201.9		336		228	108
OLORUNSOGO NIPP	0		750		0	750
SAPELE NIPP	155.1		500		225	275
SAPELE STEAM	0		720		0	720
AFAM IV-V	53		300		53	247
AFAM VI	230		850		300	550
GEREGU GAS	391		435		435	0
GEREGU NIPP	195		435		290	145
ORPAI (GAS/STEAM)	276		480		375	105
ALAQJI NIPP	0		504		0	504
IHOVBOR NIPP	90.7		450		112.5	337.5
IBOM	28.8		198		115	83
ODUKPANI NIPP	206.2		625		230	395
<b>TOTAL</b>	<b>2869</b>		<b>9235.97</b>		<b>3850.5</b>	<b>5384.3</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : TUESDAY 09/01/2018**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 10/01/2018 0MW. FREQUENCY Hz.**

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	
				0	
2	Delta	GT16	40	0	0
		GT17	40	0	
3	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
				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 Wednesday 10/01/2018 as at 0600hrs was = 20.25MW.

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	Ihovor GT1 & 3	225	0	225	1016.7
2	Alaqji NIPP GT1 & 2	240	0	240	
3	Omotosho Gas GT3, 4, 7 & 8	152	0	152	
4	Olorunsogo Gas GT3 & 7	76	0	76	
5	Omotosho GT1, 2, 5 & 6	80	60.3	19.7	
6	Omotosho NIPP GT2 & 4	240	0	240	
7	Geragu NIPP GT22	145	81	64	
				0	
				0	
				0	
				0	
				0	
				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 1435.81MMSCF OF GAS (EQUIVALENT TO 5384.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	28.9	86.2	86.2
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Alam VI ST10 & GT11	350	0	350	922.1
2	Okpai GT11	150	114	36	
3	Odukpani NIPP GT5	115	0	115	
4	Shiroro 411G3	145	55	90	
5	Jebba 232-4	285	0	285	
6	Sapele NIPP GT2	112.5	66.4	46.1	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
				0	0
<b>Total</b>					<b>2025</b>

5.0 **OUTAGES:**

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

- 1 03:21Hrs, Egbin P/S STs 2 & 4 tripped on operating oil filter block. Total LHR = 150MW  
04:34Hrs, ST4 was tied. 18:42Hrs, ST2 was tied.
- 2 03:24 - 05:10Hrs, Sapele NIPP GT2 tripped on filter separator 2 drain pot high alarm resulting in high condensate. LHR = 94.5MW
- 3 03:41Hrs, Paras Energy GTs 2 – 9 tripped due to gas problem. LHR = 69.4MW  
04:56Hrs, GT2 was tied. 04:57Hrs, GT3 was tied. 04:59Hrs, GT4 was tied. 05:02Hrs, GT5 was tied. 05:04Hrs, GT6 was tied. 05:07Hrs, GT7 was tied. 05:10Hrs, GT8 was tied and 05:12Hrs, GT9 was tied.
- 4 04:45 - 19:53Hrs, Delta P/S GT19 tripped on turbine air inlet differential pressure shut down. LHR = 78MW
- 5 05:13 - 14:16Hrs, Delta P/S GT16 tripped on turbine air inlet differential pressure shut down. LHR = 79MW
- 6 11:07 - 14:54Hrs, Sapele NIPP GT2 tripped on high air inlet differential pressure. LHR = 75MW
- 7 12:26Hrs, Odukpani NIPP GTs 1 & 3 tripped on loss of flame. Total LHR = 195.3MW. 16:33Hrs, GT1 was tied.
- 8 12:45Hrs, Delta P/S GTs 12 & 13 tripped on exhaust over temperature spread trip. LHR = 40MW
- 9 16:20 -16:30Hrs, Gbarain NIPP GT2 tripped on low gas pressure. LHR = 33MW
- 10 17:13 - 18:35Hrs, Egbin ST5 tripped due to technical problem. LHR = 110MW
- 11 19:39 - 20:38Hrs, Egbin ST2 tripped on undisclosed fault. LHR = 17MW
- 12 19:54 - 22:33Hrs, Egbin ST5 tripped on burner problem. LHR = 38MW
- 13 21:47 - 22:16Hrs, Omoku GTs 1, 2, 5 & 6 tripped due to loss of supply from Rumosi T/S. LHR = 52MW  
22:19Hrs GT2 was tied, 22:22Hrs, GT1 was tied, 22:26Hrs, GT6 was tied and 22:28Hrs, GT5 was tied
- 14 22:11 -22:54Hrs, Ibom Power GT3 tripped due to cut conductor between Uyo and Itu T/S generation reduced from 108MW to 28.8MW on island operation to feed Eket and Uyo.

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

- 1 03:49 – 04:27Hrs, Ikorodu/Shagamu 132kV line CB tripped at Ikorodu T/S on O/C phase B, distance = 84km. LHR = 52MW
- 2 06:54 – 07:30Hrs, Olorunsogo/Ikeja-West 330kV line (cct R1W) CBs tripped at both ends on the following relay indications:  
At Olorunsogo T/S:  
NARI Relay: ZM1-OP, ABC phases, trip time = 29ms, fault location phase B = 12.5km  
At Ikeja-West T/S:  
Siprotec Relay: General trip, Yellow phase fault, 1 trip, Z1 pick BG, PU time = 60ms, trip time = 11ms, distance = 34.4km. LHR = 103.4MW
- 3 06:54 – 07:48Hrs, Olorunsogo/Ayede 330kV line (cct R2A) CBs tripped at both ends on the following relay indications:  
At Olorunsogo T/S:  
NARI Relay: ZM1-OP, ABC phases, trip time = 479ms, fault location phase B = 23.6km.  
At Ayede T/S:  
Siprotec Relay: General trip Yellow phase Z1, E/F, O/C pick up L2, PU time = 64ms, distance = 88.1km. LHR = 108.4MW
- 4 12:21 - 12:32Hrs, New Haven/Nkalagu 132kV line 1 CB tripped at New Haven T/S on instantaneous E/F. LHR = 9MW
- 5 12:21 - 17:22Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) CBs tripped at both ends on the following relay indications:  
**At Ikot-Ekpene T/S:**  
SEL Relay: Zone 1, Blue phase - N,  
**At Ugwuaji T/S:**  
Main 1 Relay: DEF. LHR = 318MW
- 6 12:46 - 13:07Hrs, Mando/Zaria 132kV line CB tripped at Mando T/S on distance protection zone 3, ABC, O/C Yellow phase, VAJ 86TE, location = 209.3km. LHR = 68MW
- 7 13:02 - 14:35Hrs, Egbin/Ikeja-West 330kV line (cct N6W) CBs tripped at both ends on the following relay indication:  
At Egbin T/S:  
Micom Relay: Start B, trip Z2, started phase ABC, AR lock out shot, distance = 91.23km  
At Ikeja-West T/S:  
Siprotec relay: general trip B phase fault, zone 1 trip, 5x-BU IP phase C, P. U. time = 87ms, trip time = 0ms, distance = 1.7km  
Micom relay: General trip Red, Yellow & Blue phases fault, distance Z12, started phase CN, trip phase ABC, start element distance, O/C start l>2,3,4, E/F start INI, O/C trip l>3, distance trip Z1, fault duration = 102.5ms, relay trip time = 79.33ms, fault location = 3.229km. LHR = 115MW
- 8 13:02 - 13:32Hrs, Omotosho/Ikeja-West 330kV line (cct M5W) tie CB tripped at Ikeja-West T/S on  
Siprotec relay: VT fuse fail  
Micom Relay: Started phase E/F start INI, trip element no, fault duration = 39.67ms, relay trip time = 0s. LHR = 310MW

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

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

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A1S, U1A, D2K & K4U.

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** cct N4J (on soak at Egbin T/S)

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** cct S5B

- 1 09:24 through 24:00Hrs, Gombe T/S 150MVA 330/132/33kV transformer T1A was taken out to carry out annual preventive maintenance on the transformer. Load loss = 90MW  
Note: 17:25Hrs, Job was suspended on the transformer due night fall.
- 2 10:31 – 12:40Hrs, Alaoji/Aba 132kV line 2 was taken out to enable PC&M crew check and rectify the non-functionality of the line volt meter. Load loss = 26MW.
- 3 12:17 - 15:08Hrs, Birnin Kebbi/Sokoto 132kV line was taken out to enable LMD crew replace broken insulators on towers #253 and 254 with other ones. Load loss = 60MW

**5(D) URGENT OUTAGES:**

- 1 02:02 through 24:00Hrs, Shiroro P/S 411G4 was shut down due to water leakage on radiator #4. Load loss = 50MW
- 2 03:25 through 24:00Hrs, Shiroro 411G2 deloaded itself to zeroMW and was consequently shut down
- 3 06:34 - 21:13Hrs, Delta P/S GT15 was shut down due to high inlet differential pressure. Load loss = 95MW
- 4 11:18 through 24:00Hrs, Jebba 2G1 was shut down on as per NCC's instruction in order to establish the cause of the recent system disturbances. Load loss = 75MW

**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 2 - OTHER 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.
- GROUP 7 - ALL OTHER PLANTS.

**6 WEATHER REPORT:-** NIL

**7 INTERNATIONAL LINES:-**

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

Maximum load - 234MW at 20:00Hrs.  
Minimum load - 112MW at 01:00Hrs.

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

Maximum load - 84MW at 22:00Hrs.  
Minimum load - 46.0MW at 05:00Hrs.

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

Maximum load - 28.2MW at 20:00Hrs.  
Minimum load - 12MW at 02:00Hrs.

**8 MISCELLANEOUS:-**

- 1 09:09Hrs, Ikeja-West T/S 75MX Shunt Reactor R1 was taken out of service for voltage control.  
V/P = 309/312kV
- 2 09:11Hrs, Ikeja-West T/S 75MX Shunt Reactor R2 was taken out of service for voltage control.  
V/P = 311/314kV
- 3 11:04Hrs, Shiroro/Gwagwalada 330kV line (cct R5G) CB #3602 was opened and isolated at Shiroro P/S as per NCC's instruction in order to establish the cause of the recent disturbances. No load loss as the tie CB was in service.
- 4 11:08Hrs, Lokoja/Gwagwalada 330kV line 2 (cct L7G) was restored due to high load flow on cct L6G
- 5 12:47Hrs, Shiroro 411G2 was tied for test.
- 6 12:52Hrs, Ibom Power GT3 was tied. The unit had been islanded due to work on Alaoji/Aba 132kV line 2.
- 7 18:01Hrs, cct F1K was restored on soak.

10 SYSTEM BLACK START CAPABILITY

Delta, Shiroro & Egbin - Available.

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	7	12
132kV	102	84	18

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

- 1 Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.
- 2 Birnin Kebbi 75MX Reactor R1.

KADUNA REGION:

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

8 18:02Hrs, Shiroro P/S reduced generation by 100MW on NCC instruction for system stability.

9 19:16Hrs, Olorunsogo Gas GT1 was tied. The unit was out due to gas constraint.

10 20:47Hrs, Jebba 2G4 was tied. The unit was out on fault.

11 22:40Hrs, Odukpai NIPP GT4 was tied. The unit was out on fault.

12 23:50Hrs, Omosho Gas GT6 was tied. The unit was out due to gas constraint.

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

12(D) LAGOS REGION

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

SHIRORO REGION:- Nil

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.

**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.

**OSOGBO 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. NIL**

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

**12 (F) LINES WITH MISSING SKY WIRE**

**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 Apo T/S 132kV Keffi line - 36 spans
- 4 Shiroro T/S 330kV Jebba line 2 - 28 spans

**12 (G) 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





