

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

**DAILY OPERATIONAL REPORT FRIDAY 11/08/2017**

**FOR: EVENTS OF THURSDAY 10/08/2017**

## 1.0 EXECUTIVE OPERATIONS SUMMARY:

### 1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	17,720	20:30	10/08/2017
GENERATION CAPABILITY	7340.6	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4790.3	-do-	-do-
PEAK GENERATION	4207.9	-do-	-do-
LOWEST GENERATION	2822.3	04:00	10/08/17
	3408	0000-0800	-do-
	3549.8	0900-1600	-do-
	4207.9	1700-2400	-do-
PEAK GENERATION TO DATE	5074.7	21:30	02/02/2016
MAXIMUM AVAILABLE CAPACITY TO DATE	7492.6	06:00	14/04/2014
MAXIMUM PEAK GENERATION CAPABILITY TO DATE	7099	07:00	13/04/2014
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	363	Omotosho T/S	13:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe & Yola T/S	15:00 & 16:00

### 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.50	00:00
LOWEST FREQUENCY	49.877	9:35

### 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 27th June, 2017		No. of days since last total collapse: 42												
Date of last partial collapse: 19 <sup>th</sup> July, 2017		No. of days since last partial collapse: 22												
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	
2009	Total	1	--	--	--	2	5	5	4	1	--	--	1	19
	Partial	--	5	4	3	3	--	--	1	--	2	1	1	20
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	3	1			1				9
	Partial										2	1	4	6
2015	Total	1		1		2	1				1			4
	Partial	--	--	1		2				1				4
2016	Total	--	--	2	3	6	5		1	1	2	2		22
	Partial	--	--	1		1	3	1						6
2017	Total	5	3		3	1	1							13
	Partial	1		1			1							3

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)	
1	KAINJI	HYDRO	335	239
2	JEBBA	HYDRO	360	243
3	SHIRORO	HYDRO	549	424
4	EGBIN ST2 - 5	STEAM	354	304
5	SAPELE	STEAM	60	50
6	DELTA	GAS	506	295
7	AFAM IV-V	GAS	0	0
8	GEREGU GAS	GAS	276	80
9	OMOTOSHO GAS	GAS	75.7	76
10	OLORUNSOGO GAS	GAS	150.9	103.7
11	GEREGU NIPP	GAS	138	70
12	SAPELE NIPP	GAS	84.5	0
13	ALAOJI NIPP	GAS	61.2	0
14	OLORUNSOGO NIPP	GAS	101.7	87.7
15	OMOTOSHO NIPP	GAS	73.3	79.4
16	ODUKPANI NIPP	GAS	113.8	106.1
17	IHOVBOR NIPP	GAS	98.3	110.2
18	OKPAI	GAS	304	190
19	AFAM VI	GAS	139	137
20	IBOM POWER	GAS	0	0
21	ASCO	GAS	0	0
22	A.E.S	GAS	0	0
23	OMOKU	GAS	73.3	3.9
24	TRANS AMADI	GAS	18.2	0
25	RIVERS IPP	(GAS)	0	0
26	EGBIN ST6	(GAS)	165	160
27	PARAS ENERGY	(GAS)	60.6	63.3
28	GBARAIN NIPP	GAS	110.4	0
<b>TOTAL</b>		<b>4207.9</b>	<b>2822.3</b>	

### 1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT		
		MWH	MWH/H	MWH	MWH/H	
1	KAINJI	HYDRO	7,027.00	292.79	7,009.60	292.07
2	JEBBA	HYDRO	8,489.00	353.71	8,465.44	352.73
3	SHIRORO	HYDRO	11,503.00	479.29	11,472.48	478.02
4	EGBIN ST2 - 5	STEAM	7,545.00	314.38	7,157.00	298.21
5	SAPELE	STEAM	1,182.30	49.26	1,168.70	48.70
6	DELTA	GAS	9,646.70	401.95	9,450.20	393.76
7	AFAM IV-V	GAS	-	0.00	-	0.00
8	GEREGU GAS	GAS	4,259.90	177.50	4,235.07	176.46
9	OMOTOSHO GAS	GAS	1,669.00	69.54	1,646.60	68.61
10	OLORUNSOGO GAS	GAS	2,772.00	115.50	2,743.78	114.32
11	GEREGU NIPP	GAS	2,242.62	93.44	2,230.28	92.93
12	SAPELE NIPP	GAS	623.60	25.98	611.20	25.47
13	ALAOJI NIPP	GAS	704.00	29.33	698.10	29.09
14	OLORUNSOGO NIPP	GAS	2,305.60	96.07	2,272.10	94.67
15	OMOTOSHO NIPP	GAS	1,448.00	60.33	1,433.60	59.73
16	ODUKPANI NIPP	GAS	2,634.70	109.78	2,614.50	108.94
17	IHOVBOR NIPP	GAS	2,369.25	98.72	2,348.15	97.84
18	OKPAI	GAS	6,414.00	267.25	6,257.10	260.71
19	AFAM VI	GAS	2,605.17	108.55	2,564.07	106.84
20	IBOM	GAS	-	0.00	-	0.00
21	ASCO	GAS	-	0.00	-	0.00
22	A.E.S	GAS	-	0.00	-	0.00
23	OMOKU	GAS	1,672.60	69.69	1,635.16	68.13
24	TRANS AMADI	GAS	409.40	17.06	398.30	16.60
25	RIVERS IPP	GAS	-	0.00	-	0.00
26	EGBIN ST6	STEAM	3,863.00	160.96	3,655.50	152.31
27	PARAS ENERGY	GAS	1,479.10	61.63	1,471.50	61.31
28	GBARAIN NIPP	GAS	745.39	31.06	734.29	30.60
<b>TOTAL</b>			<b>83,610.33</b>	<b>3,483.76</b>	<b>82,272.72</b>	<b>3,428.03</b>

## GENERATION POSITION AT 06:00HRS OF FRIDAY 11/08/2017

	STATIONS	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	1G5, 6, 11 & 12	440	440	1G5, 6, 11 & 12	440	291	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.
		4			4			
	JEBBA HYDRO	2G2 - 5	386	380	2G2 - 5	367	367	2G1 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.
		4			4			
	SHIRORO HYDRO	411G1 - 4	600	600	411G1 - 4	500	320	411G1 - 3 - Load reduced due to high frequency.
		4			4			
	EGBIN STEAM	ST2, 4 & 5	660	660	ST2 & 4	440	301	ST1 - Tripped on generator CB trouble. ST3 - Tripped on high vibration. ST5 - Out for frequency management.
		3			2			
	SAPELE (STEAM)	ST2	120	57	ST 2	57	57	ST1 - Tripped on low drum level. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
		1			1			
DELTA (GAS)	GT4, 7, 9 - 13, 15, 16, 18 & 19	585	555	GT4, 7, 9 - 13, 15, 16, 18 & 19	555	430	GT3 & 5 - Out due to generator winding fault. GT6 & 8 - Out on maintenance. GT14 - Out on major overhaul. GT17 - Out on excitation trouble. GT20 - Out on major inspection.	
	11			11				
	0			0				
AFAM IV & V (GAS)	0	0	0	0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 & 18 - Out due to burnt generator transformer. GT19 & 20 - Awaiting major overhaul.	
	0			0				
GEREGU GAS	GT11 & 13	290	290	GT11 & 13	290	120	GT12 - Out on maintenance.	
	2			2				
OMOTOSHO GAS	GT1 - 8	336	304	GT1, 5 & 7	114	76.6	GT2, 3, 4, 6 & 8 - Out for frequency management.	
	8			3				
OLORUNSOGO GAS	GT1 - 8	336	304	GT1, 2, 5, 6 & 7	190	127.8	GT3 & 8 - Out for frequency management. GT4 - Shut down due to high frequency.	
	8			5				
GEREGU NIPP	GT21 & 22	290	290	GT22	145	78	GT21 - Out due to gas constraints. GT23 - Tripped on ventilation system trip.	
	2			1				
SAPELE NIPP	GT4	112.5	112.5	GT4	112.5	112.4	GT1 - Out on undisclosed fault. GT2 - Out due to auxiliary oil pump problem. GT3 - Out on bearing lift pump trouble.	
	1			1				
ALAOJI NIPP GAS	GT1, 2 & 4	375	360	GT1	35.8	35.8	GT2 - On standby due to high frequency. GT3 - Shut down due to generator air inlet filter trouble. GT4 - Out due to gas constraints. Generation reduced due to high air inlet differential pressure.	
	3			1				
OLORUNSOGO NIPP GAS	GT1 -3	375	360	GT1	120	93.6	GT2 & 3 - Out for frequency management. GT4 & ST2 - Out of production since 25/10/2016.	
	3			1				
OMOTOSHO NIPP GAS	GT1, 2 & 4	375	360	GT1	120	55.8	GT2 - Out for frequency management. GT3 - Out of production since 02/08/2016. GT4 - Out due to gas constraints.	
	3			1				
ODUKPANI NIPP	GT1	125	120	GT1	109.3	109.3	GT2 - Tripped on busbar 1 under voltage. GT3 & 5 - Out due to internal problem. GT4 - Out on unit transformer problem.	
	1			1				
IHOVBOR NIPP	GT1 - 3	337.5	337.5	GT2	92.9	92.9	GT1 - Out for frequency management. GT3 - Out due to tripping of ccts H7V & V7B.	
	3			1				
GBARAIN NIPP GAS	GT2	112.5	112.5	GT2	89.8	89.8	Available unit on bar.	
	1			1				
OKPAI GAS/STEAM	GT11, 12 & ST18	450	305	GT11, 12 & ST18	305	234	Generation limited to 305MW due to high system frequency	
	3			3				
AFAM VI GAS/STEAM	GT11, 13 & ST10	433.3	433.3	GT11	150	126	GT12 - Shut down due to power oil pump system fault. GT13 & ST10 - Out for frequency management.	
	3			1				
IBOM POWER GAS	0	0	0	0	0	0	GT2 - Out due to the fire outbreak on the control panel. GT3 - Out on maintenance work. Generation reduced due to high air inlet differential pressure.	
	0			0				
AES	0	0	0	0	0	0	Out of production since 27/09/2014.	
	0			0				
ASCO	0	0	0	0	0	0	GT1 - Shut down due to leakage in the furnace.	
	0			0				
OMOKU GAS	GT1, 2, 5 & 6	100	80	GT1, 2, 5 & 6	80	69.2	GT3 - Out on maintenance.	
	4			4				
TRANS-AMADI	GT4	25	20	GT4	18.3	18.3	Available unit on bar.	
	1			1				
RIVERS	0	0	0	0	0	0	Out of production since 16/09/2016.	
	0			0				
	<b>SUB TOTAL</b>	<b>73</b>	<b>6863.8</b>	<b>6480.8</b>	<b>53</b>	<b>4331.6</b>	<b>3205.5</b>	Frequency = 50.32Hz.

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 11/08/2017 FOR UNITS ON BILATERAL AGREEMENT

GENERATOR	ST6	MW	MW	ST6	MW	MW	REMARKS
	1			1			
EGBIN	1	220	220	1	156	156	Available unit on bar.
PARAS ENERGY	GT2, 4, 6 - 9	64.1	64.1	GT2, 4, & 6 - 9	64.1	64.1	GT5 - Out on maintenance.
<b>SUB TOTAL</b>	7	288.8	288.8	6	220.1	220.1	
<b>GRAND TOTAL</b>	8	7152.6	6769.6	7	4,551.70	3,425.60	Frequency = 50.32Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 10/08/2017

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	24	NIL
	PTCEXPRESS	11	1300hrs	24	NIL
	SANKYO	on	0100hrs	24	NIL
	FEEDER 8	10	2200hrs	24	NIL
IKORODU	PULK IT	10	1300hrs	24	NIL
	INDUSTRIAL	15	2000hrs	14	Tripped on E/F
	SPINTEX	20	2000hrs	15	Tripped on E/F
	DANGOTE	13	2100hrs	24	NIL
	LAND CRAFT	on	0100hrs	24	NIL
ALAUUSA	TR4 15MVA	4.6	1500hrs	24	NIL
	TR5 -15MVA	5.2	1500hrs	24	NIL
	ALAUUSA	13.9	1200hrs	24	NIL
MLAND	PTC (MARYLAND)	14	1500hrs	24	NIL
<b>TOTAL LOAD</b>		<b>116.7</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
IKEJA WEST/SAKATE 330KV LINE	64.6	01:00	24	NIL

**1.8 HYDROLOGICAL DATA: FRIDAY 11/08/2017**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	137.18	102.97	367.56
TAIL WATER ELEVATION (METERS)	104.95	74.80	271.5
GROSS OPERATING HEAD (METERS)	<b>32.23</b>	<b>28.17</b>	<b>96.06</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	1022	1395	563
AVERAGE SPILLAGE (M3/SEC)	0	525	0
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>1022</b>	<b>1920</b>	<b>563</b>
COMPUTED INFLOW (M3/SEC)	2171	1503	734
STORAGE DIFFERENTIAL	<b>1149</b>	<b>-417</b>	<b>171</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 10/08/2017**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	415.9	19:00	587	195.8	0:00
EKO	416.63	22:00	470.18	331.17	04:00
IKEJA	541.8	23:00	714.79	370.8	05:00

**2.0 GAS POSITION: FRIDAY 11/08/2017**

STATION	SIGNED ACQ 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)
EGBIN P/S	304		1100		440	660
DELTA (GAS)	408		765		555	210
OMOTOSHO GAS	76.7		336.8		114	222.8
OMOTOSHO NIPP	80.5		500		120	380
OLORUNSOGO (GAS)	104.3		336		190	146
OLORUNSOGO NIPP	107.4		750		120	630
SAPELE NIPP	0		500		112.5	387.5
SAPELE STEAM	48		720		57	663
AFAM IV-V	0		300		0	300
AFAM VI	110		650		150	500
GEREGU GAS	80		435		290	145
GEREGU NIPP	68		435		145	290
OKPAI (GAS/STEAM)	223		480		305	175
ALAOJI NIPP	0		504		35.8	468.2
IHOVBOR NIPP	110.2		450		92.9	357.1
IBOM	0		198		0	198
ODUKPANI NIPP	114.9		625		109.3	515.7
<b>TOTAL</b>	<b>1835</b>		<b>9085.76</b>		<b>2836.5</b>	<b>6248.3</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**SYSTEM BLACK START CAPABILITY**

Delta, Shiroro & Egbin - Available.

**SPINNING RESERVE FOR : THURSDAY 10/08/2017**

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

**3.0 SYSTEM SPINNING RESERVE AS AT 0600HRS OF FRIDAY 11/08/2017 = 0MW. FREQUENCY 50.32Hz.**

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	
3	Delta	GT16	40	0	0
		GT17	40	0	
4	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
5	Geregu NIPP	GT22	35	0	0
6	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 Friday 11/08/2017 as at 0600Hrs was = 1731.8MW.

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	Geregu NIPP GT21	145	0	145	385
2	Alaoji NIPP GT4	120	0	120	
3	Omotosho NIPP GT4	120	0	120	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1666.21MMWSCF OF GAS (EQUIVALENT TO 6248.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
				0	0
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Afam VI GT13 & ST10	283.3	0	283.3	1346.8
2	Ihovbor GT1	112.5	0	112.5	
3	Olorunsogo NIPP GT2 & 3	240	0	240	
4	Omotosho Gas GT2, 3, 4, 6 & 8	190	0	190	
5	Shiroro 41TG1-3	375	170	205	
6	Olorunsogo Gas GT3 & 8	76	0	76	
7	Omotosho NIPP GT2	120	0	120	
8	Alaoji NIPP GT2	120	0	120	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
				0	1731.8
<b>Total</b>					

**5.0 OUTAGES:-**

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

- 03:58 - 04:48Hrs, Trans-Amadi GT4 tripped due to system surge. LHR = 18.1MW.
- 03:15Hrs, Omoku P/S GTs 1, 2 & 6 went on full speed no load due to tripping of cct T4A. LHR = 50.3MW.  
04:07Hrs, 04:09Hrs & 04:10Hrs, GTs 1, 2 & 6 were tied respectively.
- 03:15Hrs, Omoku P/S GT5 tripped on generator differential lock out. LHR = 17.8MW.
- 03:21 - 05:02Hrs, Afam VI GT11 went on house load due to tripping of cct T4A. LHR = 144MW.
- 03:20 - 06:07Hrs, Delta GT15 tripped on fuel gas flow trip. LHR = 53MW.
- 09:30Hrs, Omotosho Gas GTs 1, 5 & 7 went on FSNL due to system surge. LHR = 25.4MW, 25MW and 25.5MW respectively.  
10:49Hrs, 11:48Hrs & 12:11Hrs, GTs 5, 7 & 1 were tied respectively.

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

- 02:40 - 03:34Hrs, Onitsha/Alaoji 330kV line (cct T4A) CBs tripped at both ends on the following relay indications:  
**At Onitsha T/S:** Ohmega relay = Phase A, earth aided trip, DEF forward, DEF aided trip.  
Micom relay: Started Phase A - N, trip Phase A - N, distance start < Z2 & Z3 aided trip, fault duration = 84ms, fault  
**At Alaoji T/S:** Ohmega Relay: Zone 1 trip, A-N, location = 0.73km, Micom Relay: Instantaneous distance trip zone 1, A-N, fault duration = 53ms, location = 39.7km, 6x1 Phases trip, 2x3 Phases trip, trip relay 86A.
- 09:27 - 09:54Hrs, Egbin/Ikeja-West 330kV line (cct N6W) CB tripped at Ikeja-West T/S on: Siemens Relay: - General Trip, DEF OPTD – 50N/51N, pick up time = 1583ms, Trip time = 1499ms, Distance = 2525km  
Micom Relay: – AR blocked, FNTP, failure alarm, started phase, E/F, Start INFD. No load loss as ccts N7K, N8K, K7W and K8W were in service.
- 09:27 - 09:29Hrs, Benin/Egbin 330kV line (cct B6N) CB tripped at Benin T/S only on:  
ABB Relay: - Trip – Trip, Trip – TRL 1, 2, 3, Exc - CS, TEF – trip, distance = Not Available.  
Auxiliary Relay: MVAJ K86 ABC. No load loss as ccts B5M, V7B and H7V were in service.
- 09:27 - 15:43Hrs, Akangba T/S 90MVA 330/132/13.8kV transformer T2A primary & secondary CBs tripped on REF protection. No load loss as 3X 90MVA transformers T1A, T1B & T2B, were in service.
- 15:15 - 15:35Hrs, Osogbo/Ikeja-West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:  
**At Osogbo T/S:** Siprotec Relay – Main 1 relay trip, Yellow phase, phase trip E/F, Instantaneous pick up L2E, PU time = 49ms, Trip time = 425ms, Distance = 203.7km, auxiliary relay trip 86T.  
**At Ikeja-West T/S:** Siprotec Relay – General trip, Yellow phase fault zone 1 trip, zone 1 pick up BG, PU time = 59ms, Distance = 54.8km.  
Micom Relay – General trip, zone 1 trip, started phase B – N, Trip phase B, E/F start I NI, fault location = 110.9km. No load loss as cct H2A, R2A & R1W were in service.
- 18:13 Hrs, Aja Alagbon/Akoka 132kV line CB tripped at Alagbon T/S on fuse failure relay (FFR). LHR = 57MW.  
19:51Hrs, Ikeja-West/Oworosoki/Akoka 132kV line was restored up to Alagbon T/S terminal.
- 21:13 - 21:48Hrs, Oghara T/S 30MVA 132/33kV transformer T2 primary & secondary CBs tripped on O/C 3 phases with heavy surge. LHR = 3.5MW.
- 20:11 - 10:16Hrs, Asaba/Agbor 132kV line 2 CB tripped at Asaba T/S on O/C 3 phases zone 1. LHR = 11.4MW

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

- 10:07 - 16:55Hrs, Osogbo T/S 60MVA 132/33kV transformer 4T4 was taken out for annual preventive maintenance. Load loss = 7.5MW
- 12:22 - 12:50Hrs, Ikeja-West/Ejigbo 132kV line 1 was released to maintenance crew for annual preventive maintenance on the CB and associated isolators. No load interrupted as the line was on soak.
- 12:40 - 15:47Hrs, Tamburawa T/S 30/40MVA 132/33kV transformer TR1 was taken out of service for maintenance crew to carry out annual preventive maintenance on the transformer and associated equipment. Load loss = 6.5MW.

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

- 05:10 - 06:25Hrs, Paras Energy GT4 was shut down due to high exhaust temperature problem. LHR = 9MW.
- 18:54 - 20:40Hrs, Kaduna/Zaria 132kV line CB was opened at Zaria T/S to allow maintenance crew top up low SF6 gas of 60MVA 132/33kV transformer T3 primary CB to normal level. Load loss = 46MW.

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

The under mentioned line was opened on frequency control:-

- 09:35 - 09:40Hrs, Osogbo/Offa/Omuaran 132kV line CB.  
Load loss = 19MW. Frequency was 49.82Hz

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

**5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** cct L7G & U2A.

**5 (I) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** ccts K1J, A2K & N4J.

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

**5 (K) 330KV LINES THAT ARE OUT ON LINE FAULT:-** cct M5W

**9 WEATHER REPORT:** Rainfall reported at Katampe & Osogbo.

**10 INTERNATIONAL LINES:-**

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

Maximum load - 180MW at 21:00Hrs.

Minimum load - 105MW at 05:00Hrs.

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

Maximum load - 80.0MW at 14:00Hrs.

Minimum load - 68MW at 19:00Hrs.

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

Maximum load - 36.6MW at 20:00Hrs.

Minimum load - 25MW at 04:00Hrs.

**11 MISCELLANEOUS:-**

- 00:48Hrs, Shiroro G/S 411G3 was shut down for frequency management.  
LHR = 50MW
- 01:24Hrs, Olorunsogo Gas GT4 was shut down for frequency management.  
LHR = 26MW.

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

GROUP 1 - ALL UNITS OFFERING FREE GOVERNOR FREQUENCY RESPONSE.

GROUP 2 - ALL UNITS OFFERING REGULATING RESERVE.

GROUP 3 - ALL UNITS OFFERING SPINNING RESERVE.

GROUP 4 - HYDRO IN HIGH FLOOD PERIOD SEASON, KAINJI, JEBBA AND SHIRORO.

GROUP 5 - ALL UNITS USED TO AVOID OVERLOADING TRANSMISSION LIMITS.

GROUP 6 - ALL UNITS OFFERING VOLTAGE SUPPORT OUTSIDE NORMAL LEVEL.

GROUP 7 - ALL UNITS IN LOCATION TO DIMINISH LOSSES

GROUP 8 - ALL UNITS NOT OFFERING ANY SERVICES.

**8 (A) COMMUNICATION MEDIA**

STATIONS	NO. INSTALLED	NO. WORKING
PLC/PAX	37	35
OPTIC FIBRE	13	10
PLS	14	5

**8 (B) SCADA RTU STATUS**

STATIONS	TOTAL NO OF STATIONS	NO OF RTU INSTALLED	NO OF RTU WORKING
POWER STATIONS	23	8	3
330kV	41	17	12
132kV	119	103	19

**12.0 UNAVAILABLE EQUIPMENTS**

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

**SHIRORO REGION:**

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

**KADUNA REGION:**

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

**ENUGU REGION:**

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

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

**LAGOS REGION:**

- 3 01:45 - 03:48Hrs, Delta G/S GT16 was shut down for frequency manangement. LHR = 60MW.
- 4 03:02 - 04:17Hrs, Jebba G/S 2G2 was shut down for frequency management.
- 5 03:07 - 20:01Hrs, Sapele NIPP GT4 was shut down for frequency management. LHR = 80MW.
- 6 03:17Hrs, Afam/Ikot-Ekpene 330kV line 1 was taken out of service for voltage control. Voltage Profile: 361/356kV.
- 7 06:24Hrs, Delta P/S GT16 was shut down for frequency management. LHR = 70MW.
- 8 06:25Hrs, Paras Energy GT4 was tied. The unit had been out on fault.
- 9 09:17Hrs, Trial restoration on Omotosho/Ikeja-West 330kV line (cct M5W) from Omotosho T/S failed instantly on: **PSL 601 Relay:** – GA RT1PA, RTIPB and CI, Distance protection zone 5, O – S protection zone 1 trip, permanent trip fault type, phase B grounded, Distance = -0.1km, ground distance zone 1 trip, AC trip. **PSL 602 Relay:** – Auxiliary relay, tripping ABC stages 1 & 2.
- 10 09:27Hrs, Trial restoration on Omotosho/Ikeja-West 330kV line (cct M5W) from Ikeja-West T/S failed instantly on: Siprotec Relay: – YPA fault, 50N/51N, PU time = 1277ms, Distance = 60.6km. Micom Relay: – AR blocked, SNTT failure alarm.
- 11 10:59 – 11:42Hrs, Gusau T/S 132kV incoming CB was opened to allow Ad-hoc committee from CHQ confirm protection scheme on the newly installed CB. Load loss = 12.6MW.
- 12 18:29Hrs, Delta GT9 was tied. The unit had been out on fault.
- 13 19:40Hrs, Gbarain NIPP GT2 was tied. The unit had been out for frequency management.
- 14 20:24Hrs, Olorunsogo gas GT5 was tied. The unit had been out on frequency management.

**12(D) LAGOS REGION**

- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S.
- 2 Agbara/Ojo line 1 on soak.

**SHIRORO REGION:- Nii**

**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.

**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/tire 132kV lines 1 & 2 - 1 span.

- 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.
- 2 Jebba/Osogbo 330kV line 1 (cct J1H) - Defective line isolator mechanism at Osogbo T/S

**ENUGU REGION:**

- 1 New Haven/Yendev 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/Yendev 132kV By pass isolator - Canibalized to repair the line isolator.

**SHIRORO REGION**

- 1 Kainji/Jebba 330kV line 1 - CB problem at Kainji T/S.
- 2 Jebba T/S 75MX reactor 2R2 CB - exploded.

**PORT HARCOURT REGION**

- 1 Alaoji/Ikot-Ekpene 330KV line 2 (cct A2K) Yellow Phase isolator not latching property.

**12 (C) UNAVAILABLE/DEFECTIVE GROUND SWITCHES**

**Benin Region**

- 1 Irrua T/S: Benin/Irrua 132kV line Earth Switch - faulty.

**ENUGU REGION:**

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

- 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, 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