

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

## DAILY OPERATIONAL REPORT OF SUNDAY 03/12/2017

### FOR: EVENTS OF SATURDAY 02/12/2017

#### 1.0 EXECUTIVE OPERATIONS SUMMARY:

##### 1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	17,720	21:45	02/12/2017
GENERATION CAPABILITY	7330.2	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5444	-do-	-do-
PEAK GENERATION	4732.5	-do-	-do-
LOWEST GENERATION	3645.9	15:00	02/12/2017
8-HOURLY DURATION PEAK	3981.5	0000-0800	-do-
	3942	0900-1600	-do-
	4732.5	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 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	354	Omotosho T/S	14:00
LOWEST VOLTAGE FOR THE DAY	298	Makurdi T/S	10:00

##### 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.468	23:56
LOWEST FREQUENCY	50.087	18:33

##### 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 30th Oct, 2017		No. of days since last total collapse: 35													
Date of last partial collapse: 17 <sup>th</sup> Oct., 2017		No. of days since last partial collapse: 47													
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	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	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	3	3			9	

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)	
1	KAINJI	HYDRO	401	395
2	JEBBA	HYDRO	446	273
3	SHIRORO	HYDRO	296	202
4	EGBIN ST2 - 5	STEAM	520	481
5	SAPELE	STEAM	0	0
6	DELTA	GAS	497	329
7	AFAM IV-V	GAS	62	60
8	GEREGU GAS	GAS	276	249
9	OMOTOSHO GAS	GAS	181.4	153.2
10	OLORUNSGO GAS	GAS	134.6	122.9
11	GEREGU NIPP	GAS	137	120
12	SAPELE NIPP	GAS	180.8	174.6
13	ALAOJI NIPP	GAS	0	0
14	OLORUNSGO NIPP	GAS	108.6	102.7
15	OMOTOSHO NIPP	GAS	106.8	102.3
16	ODUKPANI NIPP	GAS	288.3	0
17	IHOVBOR NIPP	GAS	89.5	84.4
18	OKPAI	GAS	248	245
19	AFAM VI	GAS	373	247
20	IBOM POWER	GAS	89.5	98
21	ASCO	GAS	0	0
22	A.E.S	GAS	0	0
23	OMOKU	GAS	20.6	7.4
24	TRANS AMADI	GAS	41.2	0
25	RIVERS IPP	(GAS)	0	0
26	EGBIN ST6	(GAS)	165	130
27	PARAS ENERGY	(GAS)	70.2	69.4
28	GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4732.5</b>	<b>3645.9</b>	

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

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT		
		MWH	MWHH	MWH	MWHH	
1	KAINJI	HYDRO	8869.00	369.54	8853.20	368.88
2	JEBBA	HYDRO	7206.00	300.25	7184.60	299.36
3	SHIRORO	HYDRO	4624.00	192.67	4593.19	191.38
4	EGBIN ST2 - 5	STEAM	11423.00	475.96	10835.60	451.48
5	SAPELE	STEAM		0.00		0.00
6	DELTA	GAS	9218.83	384.12	9074.90	378.12
7	AFAM IV-V	GAS	1471.00	61.29	1466.56	61.11
8	GEREGU GAS	GAS	5619.60	234.15	5594.54	233.11
9	OMOTOSHO GAS	GAS	4105.00	171.04	4071.40	169.64
10	OLORUNSGO GAS	GAS	3186.28	132.76	3159.80	131.66
11	GEREGU NIPP	GAS	3022.00	125.92	3006.15	125.26
12	SAPELE NIPP	GAS	4127.98	172.00	4101.76	170.91
13	ALAOJI NIPP	GAS		0.00		0.00
14	OLORUNSGO NIPP	GAS	3082.50	128.44	3036.90	126.54
15	OMOTOSHO NIPP	GAS	2400.90	100.04	2365.30	98.55
16	ODUKPANI NIPP	GAS	5314.03	221.42	5283.72	220.16
17	IHOVBOR NIPP	GAS	1960.00	81.67	1942.41	80.93
18	OKPAI	GAS	5903.00	245.96	5749.10	239.55
19	AFAM VI	GAS	6417.77	267.41	6321.00	263.38
20	IBOM	GAS	2128.74	88.70	2119.00	88.29
21	ASCO	GAS		0.00		0.00
22	A.E.S	GAS		0.00		0.00
23	OMOKU	GAS	412.60	17.19	397.09	16.55
24	TRANS AMADI	GAS	708.60	29.53	687.20	28.63
25	RIVERS IPP	GAS		0.00		0.00
26	EGBIN ST6	STEAM	3394.00	141.42	3208.30	133.68
27	PARAS ENERGY	GAS	1652.50	68.85	1647.00	68.63
28	GBARAIN NIPP	GAS		0.00		0.00
<b>TOTAL</b>			<b>96,247.33</b>	<b>4,010.31</b>	<b>94,698.72</b>	<b>3,945.78</b>

## GENERATION POSITION AT 06:00HRS OF SUNDAY 03/12/2017

	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	440	1G5, 6, 11 & 12 4	440	382	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, 2, 3 & 5 4	380	344	2G4 - Out on frequency management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1 & 2 2	300	118	411G3 - Out on maintenance. 411G4 - Out on water management. Generation reduced on frequency management.
	EGBIN STEAM	5	ST2, 4 & 5 3	660	660	ST2, 4 & 5 3	660	464	ST1 - Tripped on generator CB trouble. ST3 - Tripped on high vibration.
	SAPELE (STEAM)	6	0 0	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 -13, 15, 16, 18 & 19 11	590	565	GT4, 7, 9 -13, 15, 16, 18 & 19 11	565	504	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. GT8 - Out on maintenance. GT17 - Out on excitation trouble. GT20 - Tripped on high exhaust temperature
	AFAM IV & V (GAS)	8	GT18 1	75	62	GT18 1	62	62	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 3	435	435	GT12 & 13 2	290	180	GT11 - Shut down due to gas constraint. Generation reduced on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1 & 3 - 7 6	228	213.8	GT2 & 8 - Out on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 6 & 8 4	152	140.9	GT1, 3, 5 & 7 - Out on frequency management.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT22 1	145	119	GT21 - Out on maintenance. GT23 - Out due to gas constraints.
	SAPELE NIPP	4	GT1 & 2 2	225	225	GT1 & 2 2	225	168.6	GT3 - Out on undisclosed fault. GT4 - Tripped on fire protection alarm. Generation reduced due to high gas temperature.
	ALAOJI NIPP GAS	4	GT1 & 2 2	250	240	0 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 3	375	360	GT1 1	120	110.2	GT2 & 3 - Out on frequency management. GT4 - Out of production since 25/10/2016. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1 & 4 2	250	240	GT4 1	120	100.9	GT1 - Out on frequency management. GT2 - Tripped on loss of power supply from MCC. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT2, 3, 4 & 5 4	480	468	GT2& 5 2	234	172.7	GT1 - Out due to air inlet differential pressure. GT3 - Out due to line constraint. GT4 - Out on frequency management.
	IHOVBOR NIPP	4	GT1 - 3 3	337.5	337.5	GT3 1	112.5	83.4	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 due to heater problem.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	375	375	GT11, 12 & ST18 3	375	267	GT11 & 12 - Generation reduced on frequency management. Generation limited to 375MW due to unavailability of one boiler as a result of water shortage.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	620	620	GT11 & 13 2	280	243	GT12 & ST10 - Out on frequency management.
	IBOM POWER GAS	3	GT3 1	115	99.5	GT3 1	99.5	99.5	GT1 & 2 - Out on fault. Generation reduced due to high air inlet differential pressure
	AES		0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO		0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT2 & 5 2	50	40	GT2 & 5 2	21.8	21.8	GT1 & 6 - Out on fault. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. Generation reduced due to gas constraints.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1 & 2 2	41.4	41.4	GT4 - Shut down due to gas constraints. GT3 - Out on fault.
	RIVERS		0 0	0	0	0 0	0	0	Out of production since 16/09/2016.
	<b>SUB TOTAL</b>	<b>125</b>	<b>77</b>	<b>7239.5</b>	<b>7050</b>	<b>55</b>	<b>4851.2</b>	<b>3836.2</b>	Frequency = 50.33Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 03/12/2017 FOR UNITS ON BILATERAL AGREEMENT

FEEDER NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY				
U-STEEL	ON	0100HRS	24	NIL
PTCEXPRESS	5	0100HRS	18	Tripped on O/C
SANKYO	ON	0100HRS	7	Tripped on E/F
FEEDER 8	10	0100HRS	23	T3 60MVA Sec tripped on Inst O/C and inst E/F
IKORODU				
PULK IT	ON	0100HRS	24	NIL
INDUSTRIAL	20	1400HRS	24	NIL
SPINTEX	2	0700HRS	24	NIL
DANGOTE	2	0100HRS	24	NIL
LAND CRAFT	32	1000HRS	24	NIL
ALAJUSA				
TR4 15MVA	4.6	1000HRS	11	DUE TO PREVENTIVE MAINTAINACE WORK AT DISTRICT END
TR5 -15MVA	9.2	0100HRS	24	NIL
ALAJUSA	14.7	0900HRS	24	NIL
MLAND				
PTC (MARYLAND)	16	1800HRS	24	NIL
<b>TOTAL LOAD</b>	<b>115.5</b>			

1.7C BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 02/12/2017

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY				
U-STEEL	ON	0100HRS	24	NIL
PTCEXPRESS	5	0100HRS	18	Tripped on O/C
SANKYO	ON	0100HRS	7	Tripped on E/F
FEEDER 8	10	0100HRS	23	T3 60MVA Sec tripped on Inst O/C and inst E/F
IKORODU				
PULK IT	ON	0100HRS	24	NIL
INDUSTRIAL	20	1400HRS	24	NIL
SPINTEX	2	0700HRS	24	NIL
DANGOTE	2	0100HRS	24	NIL
LAND CRAFT	32	1000HRS	24	NIL
ALAJUSA				
TR4 15MVA	4.6	1000HRS	11	DUE TO PREVENTIVE MAINTAINACE WORK AT DISTRICT END
TR5 -15MVA	9.2	0100HRS	24	NIL
ALAJUSA	14.7	0900HRS	24	NIL
MLAND				
PTC (MARYLAND)	16	1800HRS	24	NIL
<b>TOTAL LOAD</b>	<b>115.5</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330KV line	70.2	21:00	24	NIL

**1.8 HYDROLOGICAL DATA: SUNDAY 03/12/2017**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.62	102.24	377.44
TAIL WATER ELEVATION (METERS)	104.20	74.10	270.2
GROSS OPERATING HEAD (METERS)	<b>37.42</b>	<b>28.14</b>	<b>107.24</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	1094	1182	213
AVERAGE SPILLAGE (M3/SEC)	155	0	0
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>1249</b>	<b>1182</b>	<b>213</b>
COMPUTED INFLOW (M3/SEC)	941	1321	53
STORAGE DIFFERENTIAL	<b>-308</b>	<b>139</b>	<b>-160</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 SATURDAY 02/12/2017**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	493.3	23:00	661.22	329.5	08:00
EKO					
IKEJA	517.7	23:00	1072.46	388.9	14:00

**2.0 GAS POSITION: SUNDAY 03/12/2017**

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	464		1100		660	440
DELTA (GAS)	504		765		565	200
OMOTOSHO GAS	213.8		336.8		228	108.8
OMOTOSHO NIPP	100.9		500		120	380
OLORUNSOGO (GAS)	140.9		336		152	184
OLORUNSOGO NIPP	110.2		750		120	630
SAPELE NIPP	168.6		500		225	275
SAPELE STEAM	0		720		0	720
AFAM IV-V	62		300		62	238
AFAM VI	243		650		280	370
GEREGU GAS	180		435		290	145
GEREGU NIPP	117		435		145	290
OKPAI (GAS/STEAM)	267		480		375	105
ALAOJI NIPP	0		504		0	504
IHOVBOR NIPP	83.4		450		112.5	337.5
IBOM	99.5		198		99.5	98.5
ODUKPANI NIPP	172.7		625		234	391
<b>TOTAL</b>	<b>2927</b>		<b>9085.76</b>		<b>3668</b>	<b>5416.8</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : SATURDAY 02/12/2017**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 03/12/2017 = 0MW. FREQUENCY 50.33Hz.**

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
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 03/12/2017 as at 0600Hrs was = 2588.2MW.

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 GT22	145	0	145	793.2
2	Ihovbor GT1 & 2	225	0	225	
3	Alaoji NIPP GT1 & 2	240	0	240	
4	Geregu Gas GT11	145	0	145	
5	Omoku GT2 & 5	40	21.8	18.2	
6	Trans-Amadii GT4	20	0	20	
			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 1444.48MSCF OF GAS (EQUIVALENT TO 5416.8MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Odukpani NIPP GT3	117	0	117	117
			0	0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Olorunsogo Gas GT1 , 3, 5 & 7	152	0	152	1528
2	Omotosho NIPP GT1	120	0	120	
3	Jebba 2G4	95	0	95	
4	AFAM VI ST10 & GT12	340	0	340	
5	Omotosho Gas GT2 & 8	76	0	76	
6	Olorunsogo NIPP GT2 & 3	240	0	240	
7	Okpai GT11 & 12	300	204	96	
8	Shiroro 411G1 & 2	300	118	182	
9	Odukpani NIPP GT4	117	0	117	
10	Geregu Gas GT12 & 13	290	180	110	
			0	0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Shiroro 411G4	150	0	150	150
<b>Total</b>					<b>2588.2</b>

**5.0 OUTAGES:**

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

- 1 14:16 - 19:21Hrs, Odukpani GT4 tripped on main transformer neutral O/C trip. LHR = 94MW
- 2 14:16 - 15:14Hrs, Odukpani GT5 tripped on main transformer neutral O/C trip. LHR = 96MW
- 3 18:30Hrs, Omoku P/S GTs 2 & 5 went on full speed no load due to loss of supply from Port Harcourt main T/S as a result of the tripping of Afam T/S 162MVA 330/132/33kV transformer. LHR = GT2 = 10.4MW & GT5 = 11.4MW  
19:16Hrs, GT5 was tied & 19:17Hrs, GT2 was tied.
- 4 18:30Hrs, Trans-Amadi GTs1 & 2 went on full speed no load due to loss of supply from Port Harcourt main T/S as a result of the tripping of Afam T/S 162MVA 330/132/33kV transformer. LHR = GT1 = 14.1MW & GT2 = 13.2MW  
19:43Hrs, GT2 was tied & 19:44Hrs, GT1 was tied.

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

- 1 14:06 – 14:31Hrs, Osogbo/Ayede 330kV line (cct H2A) CBs tripped at both ends on the following relay indications:  
**At Osogbo T/S:**  
Ohmega Relay: Zone 2, phase C, Earth, DEF forward, 86ABC T/2 and T/2, distance = 119.2km.  
**At Ayede T/S:**  
Ohmega Relay: Zone 1, phase C, Earth, distance = 18.59km. No load loss as R2A & R1W were in service.
- 2 14:36 through 24:00Hrs, Ugwuaji/Makurdi 330kV line 2 (cct U2A) CBs tripped at both ends on the following relay indications:  
**At Ugwuaji T/S:**  
ABB Relay: Main 1 & 2 operated on directional E/F.  
**At Makurdi T/S:**  
NARI Relay: Line distance, relay Red, Yellow & Blue phases, fault location = 56km. No load loss as ccts H1U, A2S, H2U & K3U were in service,
- 3 14:16 – 14:57Hrs, Ugwuaji T/S 150MVA 330/132/34.5kV transformer T1 tripped on E/F. LHR = 11.0MW
- 4 14:16 – 14:18Hrs, New Haven 60MVA 132/33kV transformer TR4 tripped on E/F. LHR = 43.8MW
- 5 18:30 - 18:38Hrs, Afam T/S 162MVA 330/132/33kV transformer secondary CB tripped on O/C. LHR = 115MW.

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

- 1 09:51 - 18:18Hrs, Osogbo/Ihovbor 330kV (cct H7V) was taken out for maintenance crew to cut dangerous trees between towers #77 and 78. No load loss as cct V7B was in service.
- 2 10:25 – 13:39Hrs, Apo T/S 45MVA 132/33/11kV transformer T1 was taken out for maintenance crew to connect new 100MVA 132/33kV transformer to the bay. Load loss = 21.5MW
- 4 11:36 – 15:06Hrs, Afam/Port Harcourt 132kV line 1 was taken out for maintenance crew treat hot spot on the Red phase isolator clamp. Note: Afam/Port Harcourt 132kV line 2 was taken out for safe working space. Load loss = 38.2MW
- 5 12:30 – 16:50Hrs, Alagbon T/S 66MVA 132/33kV transformer T2 was taken out for maintenance crew to carry out checks on control operation through digital substation control system on Ijora/Akoka 132kV line and 33kV bus section. Load loss = 5MW

**5(D) URGENT OUTAGES:**

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

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

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

**5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** cct N4J (on soak at Egbin T/S) & K1J (on soak at Jebba T/S)

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

**5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts D1K, J1H, U2A & S5B

**6 WEATHER REPORT:-** NIL

**7 INTERNATIONAL LINES:-**

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

Maximum load - 269MW at 20:00Hrs.  
Minimum load - 188MW at 08:00Hrs.

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

Maximum load - 89MW at 23:00Hrs.  
Minimum load - 55MW at 08:00Hrs.

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

Maximum load - 32MW at 21:00Hrs.  
Minimum load - 18MW at 03:00Hrs.

**8 MISCELLANEOUS:-**

- 1 00:37 - 19:34Hrs, Afam VI GT12 was shut down on frequency management. Load loss = 132MW
- 2 00:42 - 18:27Hrs, Jebba P/S 2G4 was shut down on frequency management. Load loss = 82MW
- 3 02:03Hrs, Makurdi T/S 330kV 75MX Reactor SR01 was placed in service on voltage control. V/P = 345/321kV
- 4 05:49 through 24:00Hrs Makurdi T/S 330kV 75MX Reactor SR01 was switched off for voltage control. V/P = 302/335kV
- 5 09:52Hrs, Delta P/S GT19 was tied. The unit was out on frequency management.
- 6 13:43Hrs, Ugwuaji/Makurdi 330kV line 1 was restored after maintenance crew had amended cut conductor between towers #12 & 13.

- 1 11:29Hrs, Trans-Amadi GTs 1 & 2 went on full speed no load due to planned outage on Afam/Port Harcourt 132kV line 1. Load loss = GT1 = 17.9MW & GT2 = 20.6MW 15:19Hrs, GT 1 was tied & 15:23Hrs, GT2 was tied.
- 2 11:33Hrs, Omoku P/S GTs2 & 5 went on full speed no load due to planned outage on Afam/Port Harcourt 132kV line 1. LHR = 9.7MW & 10.3MW respectively. 15:42Hrs, GT2 was tied & 15:45Hrs, GT5 was tied.
- 3 19:56Hrs, Jebba/Osogbo 330kV line 1 (cct J1H) was opened at Osogbo T/S on emergency due to arcing under the Red phase wave trap. No load loss as cct J2H was in service.
- 4 20:18Hrs, Jebba/Osogbo 330kV line (cct J1H) was opened at Jebba T/S

**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.

**10 SYSTEM BLACK START CAPABILITY**

Delta, Shiroro & Egbin - Available.

**11 (A) COMMUNICATION MEDIA**

STATIONS	NO. INSTALLED	NO. WORKING
PLC/PAX	37	31
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	5	14
132kV	102	82	20

**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.

**BAUCHI REGION:**

- 1 Gombe T/S -30MX Reactor R2A.

**ENUGU REGION:**

- 7 14:16Hrs, Ugwuaji/Makurdi 330kV line 2 (cct U2A) was restored after weak portions of the circuit was restrung by contractor.
- 8 17:47Hrs, of 30/11/2017 – 14:50Hrs, of 02/12/2017 Biu/Maduguri 132kV line CB tripped at Biu T/S on distance protection relay. LHR = 20MW
- 9 15:42Hrs, Odukpai GT2 was tied. The unit was out on frequency management.
- 10 17:52Hrs, Delta GT19 was tied. The unit was out on frequency management.
- 12 18:57Hrs, Jebba 2G2 was tied. The unit was out on frequency management.
- 14 23:16Hrs, Jebba P/S 2G2 was shut down on frequency management. Load loss = 75MW.
- 15 **LACK OF REACTOR AT IKOT-EKPENE T/S IS HINDERING SMOOTH OPERATION.**

**12(D) LAGOS REGION**

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

**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.

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

**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**

**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.

- 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/Itire 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, Ugwuaji, Osogbo, Kaduna, Jos, Gwagwalada & Alaaji 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