

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF THURSDAY 08/02/2018

FOR: EVENTS OF WEDNESDAY 07/02/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	21,390	23:00	07/02/2018
GENERATION CAPABILITY	7829.1	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5653.1	-do-	-do-
PEAK GENERATION	4814.0	-do-	-do-
LOWEST GENERATION	3704.5	16:00	07/02/2018
8-HOURLY DURATION PEAK	4459	0000-0800	-do-
	4192.2	0900-1600	-do-
	4814	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	363	Omotosho T/S	16:00
LOWEST VOLTAGE FOR THE DAY	299	Sakete T/S	15:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.662	15:57
LOWEST FREQUENCY	50.008	11:59

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 07												
Date of last partial collapse: 17th Oct., 2017		No. of days since last partial collapse: 110												
Highest No of days ever attained in-between total collapses:		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	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	4	2	22	
	Partial	--	--	--	--	--	--	--	2	--	--	--	2	
2014	Total	2	--	0	2	0	3	1	0	0	1	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	1	0	6	
	Partial	--	--	1	0	2	0	0	0	1	0	0	4	
2016	Total	--	--	2	3	6	5	0	0	1	1	2	22	
	Partial	--	1	1	0	1	3	1	0	0	0	0	6	
2017	Total	5	3	0	3	1	1	0	0	1	1	0	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	418	337
2 JEBBA	HYDRO	272	207
3 SHIRORO	HYDRO	199	110
4 EGBIN ST2 - 5	STEAM	456	432
5 SAPELE	STEAM	0	0
6 DELTA	GAS	569	513
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	360	291
9 OMOTOSHO GAS	GAS	101.2	100.7
10 OLORUNSOGO GAS	GAS	164.3	100.7
11 GEREGU NIPP	GAS	134	108
12 SAPELE NIPP	GAS	193.7	136.9
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	198.9	95.2
15 OMOTOSHO NIPP	GAS	110.5	86.4
16 ODUK PANI NIPP	GAS	388.5	220.3
17 IHOOVOR NIPP	GAS	0	0
18 OKPAI	GAS	240	242
19 AFAM VI	GAS	435	221
20 IBOM POWER	GAS	106.8	65.4
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	58	52.7
24 TRANS AMADI	GAS	40.3	36.3
25 RIVERS IPP	(GAS)	120	120
26 AZURA - EDO IPP	(GAS)	0	0
27 EGBIN ST6	(GAS)	178	162
28 PARAS ENERGY	(GAS)	70.2	67
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4814.0</b>	<b>3704.5</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9057.00	377.38	9039.10	376.63
2 JEBBA	HYDRO	6492.00	270.50	6467.24	269.47
3 SHIRORO	HYDRO	4444.00	185.17	4416.28	184.01
4 EGBIN ST2 - 5	STEAM	10017.00	417.38	9474.20	394.76
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	12565.28	523.55	12393.00	516.38
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	8128.70	338.70	8097.51	337.40
9 OMOTOSHO GAS	GAS	3123.00	130.13	3098.50	129.10
10 OLORUNSOGO GAS	GAS	3349.21	139.55	3318.74	138.28
11 GEREGU NIPP	GAS	3025.49	126.06	3009.62	125.40
12 SAPELE NIPP	GAS	4173.84	173.91	4153.15	173.05
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	3587.20	149.47	3533.10	147.21
16 OMOTOSHO NIPP	GAS	3644.30	151.85	3625.00	151.04
17 ODUK PANI NIPP	GAS	7427.01	309.46	7384.21	307.68
18 IHOOVOR NIPP	GAS	0.00	0.00	0.00	0.00
19 OKPAI	GAS	6253.00	260.54	6093.60	253.90
20 AFAM VI	GAS	4001.81	166.74	3952.00	164.67
21 IBOM	GAS	1873.79	78.07	1865.00	77.71
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	1382.60	57.61	1359.69	56.65
25 TRANS AMADI	GAS	999.80	41.66	875.40	36.48
26 RIVERS IPP	GAS	2502.20	104.26	2496.80	104.03
27 EGBIN ST6	STEAM	3933.00	163.88	3737.50	155.73
28 PARAS ENERGY	GAS	1566.60	65.28	1518.80	63.28
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>101,546.83</b>	<b>4,231.12</b>	<b>99,908.44</b>	<b>4,162.85</b>

1.7A GENERATION POSITION AT 06:00HRS OF THURSDAY 08/02/2018

	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	7	1G5, 6,11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	399	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, 2, 4 & 5 4	380	380	2G1, 4 & 5 3	285	268	2G2 - Out on frequency management. 2G3 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	580	580	411G1 & 2 2	290	197	411G2 - Generation reduced on frequency management. 411G3 & 4 - Out on water management.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	880	ST1, 2 & 4 3	660	446	ST1 - Under observation after maintenance work on the unit transformer. ST2 & 4 - Generation reduced on frequency management. ST3 - Tripped on high vibration. ST5 - Out due to low gas pressure.
	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 - 20 12	655	655	GT4, 7, 9 - 13, 15, 18 - 20 11	555	519	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. 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. GT19 & 20 - Awaiting major overhaul. GT17 - Out due to technical issue with generator auxiliary. GT18 - Tripped on load angle limitation.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	330	GT11 - 13 - Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 4 - 6 4	152	101.7	GT2, 3, 7 & 8 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 5, 6 & 8 5	190	165.7	GT1, 3 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT23 1	145	130	GT21 - Out on maintenance. GT22 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	230	230	GT1 & 3 2	230	191.6	GT2 - 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	360	360	GT1 & 2 2	240	187.9	GT1 & 2 - Generation reduced due to low gas pressure. GT3 - Out due to gas constraint. GT4 - Out of production since 25/10/2016. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	250	240	GT2 1	120	106.3	GT1 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT2 - 5 4	480	460	GT3, 4 & 5 3	345	290.3	GT1 - Out due to high air inlet differential pressure. GT2 - Out on frequency management.
	IHOVBOR NIPP	4	GT1 & 2 2	225	225	0 0	0	0	GT1 & 2 - Out due to gas constraint. GT3 - Out due to gas inlet valve problem. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out on maintenance.
IPP	OKPAI GAS/STEAM	3	GT11,12 & ST18 3	375	375	GT11,12 & ST18 3	233	233	GT12 - Generation reduced due to ambient temperature ST18 - Boiler #12: spray water valve has broken.
	AZURA - EDO	0	0 0	0	0	0 0	0	0	GT11 - Undergoing commissioning tests. GT12 & 13 - Awaiting commissioning.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	650	GT11 - 13 3	450	432	ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	78.5	GT1 & 2 - Out on fault. GT3 - Generation reduced due to line constraint.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	0	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT2, 5 & 6 3	75	60	GT2, 5 & 6 3	60	56.5	GT1 - Out due to excitation problem. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	TRANS-AMADI	4	GT1 & 2 2	50	40.9	GT1 & 2 2	40.9	40.9	GT3 - Out on fault. GT4 - Out on maintenance.
	RIVERS	1	GT1 1	180	160	GT1 1	160	20	GT1 - Generation reduced due to gas constraint.
	<b>SUB TOTAL</b>	<b>125</b>	<b>80</b>	<b>7697</b>	<b>7543.9</b>	<b>57</b>	<b>5145.9</b>	<b>4193.4</b>	Frequency = 50.2Hz.

1.7B GENERATION POSITION AT 06:00HRS OF THURSDAY 08/02/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	MAX. LOAD (MW)	ST6		ST6		220	170	Available unit on bar.
		1	220	220	1			
EGBIN	1	1	220	220	1	220	170	Available unit on bar.
PARAS ENERGY	8	GT2 - 9	70.2	70.2	GT2 - 9	70.2	70.2	Available units on bar.
		8			8			
<b>SUB TOTAL</b>	<b>9</b>	<b>9</b>	<b>290.2</b>	<b>290.2</b>	<b>9</b>	<b>290.2</b>	<b>240.2</b>	
<b>GRAND TOTAL</b>	<b>134</b>	<b>89</b>	<b>7987.2</b>	<b>7834.1</b>	<b>66</b>	<b>5,436.10</b>	<b>4,433.60</b>	Frequency = 50.22Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - WEDNESDAY 07/02/2018

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

OGBA	U-STEEL	1	1000HRS	16HRS	O/C B-PHASE
		PTCEXPRESS	10	2000HRS	22HRS
	SANKYO	ON	0100HRS	24HRS	NIL
	FEEDER 8	14	12000HRS	24HRS	NIL
KORODU	PULK IT	5	1500	24	NIL
	INDUSTRIAL	23	0900	24	NIL
	SPINTEX	3	0400	24	NIL
	DANGOTE	2	0100	24	NIL
	LAND CRAFT	46	0700	24	NIL
ALAJUSA	TR4 15MVA	8.7	0900HRS	2400	NIL
	TR5 -15MVA	7.4	0900HRS	2400	NIL
	ALAUISA	17.7	1200HRS	2400	NIL
MLAND	PTC (MARYLAND)	18	18:00:00	17HRS	OUTAGE DUE TO TRIPPING ON E/F
	<b>TOTAL LOAD</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	01:00	22	Out due to tripping of Ikorodu/Shagamu 132kV line.

**1.8 HYDROLOGICAL DATA: THURSDAY 08/02/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.02	102.10	371.91
TAIL WATER ELEVATION (METERS)	104.04	73.50	270.40
GROSS OPERATING HEAD (METERS)	36.98	28.60	101.51
AVERAGE TURBINE DISCHARGE (M3/SEC)	1128.00	1063.00	215.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1128	1063	215
COMPUTED INFLOW (M3/SEC)	283.00	1132.00	0.00
STORAGE DIFFERENTIAL	-845.00	69	-215
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355

**1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT WEDNESDAY 07/02/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	413.10	19:00	514.62	242.95	17:00
EKO	503.2	17:00	592.25	407.3	21:00
IKEJA	579.5	20:00	671.25	459.4	09:00

**2.0 GAS POSITION: THURSDAY 08/02/2018**

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	446	1100		880	220
DELTA (GAS)	519	915		555	360
OMOTOSHO GAS	101.7	336.8		162	184.8
OMOTOSHO NIPP	106.3	500		120	380
OLORUNSOGO (GAS)	165.7	336		190	146
OLORUNSOGO NIPP	187.9	750		240	510
SAPELE NIPP	191.6	500		230	270
SAPELE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	432	650		450	200
GEREGU GAS	330	435		435	0
GEREGU NIPP	130	435		145	250
ODUKPANI (GAS/STEAM)	233	480		375	105
ALAOJU NIPP	0	504		0	504
IHOVBOR NIPP	0	450		0	450
IBOM	78.5	198		115	83
ODUKPANI NIPP	290.3	625		345	280
<b>TOTAL</b>	<b>3212</b>	<b>9234.80</b>		<b>4232</b>	<b>5002.8</b>

1 MMSCF IS EQUIVALENT TO 3.79MW

**3.0 SPINNING RESERVE FOR : WEDNESDAY 07/02/2018**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 08/02/2018 = 0MW. FREQUENCY 50.22Hz.**

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	Geregu NIPP	GT22	35	0	0
		GT1	0		
5	Omotosho NIPP	GT2	40	0	0
		GT3		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 Thursday 08/02/2018 as at 0600Hrs was = 2741.6MW.

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 GT1	120	0	120	1813.1
2	Ihobor GT1 & 2	225	0	225	
3	Alaoji NIPP GT1, 2 & 4	360	0	360	
4	Olorunsogo Gas GT1, 3 & 7	114	0	114	
5	Olorunsogo NIPP GT1 - 3	360	187.9	172.1	
6	Omotosho Gas GT2, 5, 7 & 8	152	0	152	
7	Atam VI ST10	200	0	200	
8	Egbin ST5	220	0	220	
9	Geregu NIPP GT22	145	0	145	
10	Geregu Gas GT11 - 13	435	330	105	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1334.08MMSCF OF GAS (EQUIVALENT TO 5002.8MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	78.5	36.5	36.5
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Shiroro 411G2	145	52	93	602
2	Rivers IPP GT1	160	20	140	
3	Delta GT16	100	0	100	
4	Odukpiani NIPP GT2	115	0	115	
5	Egbin ST1, 2 & 4	600	446	154	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Shiroro 411G3 & 4	290	0	290	290
<b>Total</b>					<b>2741.6</b>

5.0 **OUTAGES:**

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

1 11:11 through 24:00Hrs, Odukpani NIPP GT1 tripped on high air inlet differential pressure. LHR = 90MW

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

- 1 00:12 – 16:37Hrs, New Haven T/S 60MVA 132/33kV transformer TR3 primary CB tripped on differential, REF and lockout. LHR = 24MW.
- 2 13:58 – 14:12Hrs, Delta/Benin 330kV line (cct G3B) CBs tripped at both ends on the following relay indications:  
**At Delta T/S:** Siprotec relay – Delay trip, yellow Phase zone 1 trip, E/F, distance pick L2E, pickup time = 80ms, trip time = 11ms, distance = 50.8km, carrier sent = 86x2.  
**At Benin T/S:** ABB relay – Trip start I2PE, zone 1 trip ZCOM CS, DEF CS, trip – trip, trip –TRL2, PHS –STFWL2 PE, ZM1 –trip , EFC CS, TOC STL2, fault loop = L2 –N, distance = 62.3km, MVAJ K86 ABC, lockup. No load loss as ccts S4G, S3B & S4B were in service
- 3 15:55 – 16:25Hrs, Ikeja West/Sakate 330kV line (cct NW1B5) CB tripped at Ikeja West T/S on Siprotec relay – General trip, Red, Yellow & Blue Phases, backup O/C, PU time = 30064ms, trip time = 30,000ms. LHR = 270MW.
- 4 15:55 – 16:44Hrs, Omotosho/Ikeja West 330kV line (cct M5W) CB tripped at both ends on the following relay indications:  
**At Ikeja West T/S:** Siprotec relay – General trip, Red Phase fault, DEF operated , 50N/51N pickup, PU time = 5015ms, trip time = 496ms, distance = 54.61km. Microm relay – Red, Yellow & Blue Phases fault.  
**At Omotosho T/S:** PSL 601, zero sequence zone 1 trip, Phase A trip , ground, distance zone 1 trip, Phase A grounded, distance = 38.80km. Auxiliary relay ABC stages 1 & 2.  
PSL 602 – Zero sequence zone 1 trip , Red Phase trip, ground distance zone 1 trip , Red Phase grounded , distance = 38.66km. Auxiliary relay – ABC stages 1 & 2. No load loss as cct B5M was in service.
- 5 16:20 – 16:33Hrs, Alaoji NIPP/Alaoji T/S 330kV line 1 (cct L7A) CB tripped at Alaoji NIPP on differential protection main types A, B & G.. Load loss = NIL
- 6 16:21 – 16:48Hrs, Ikot-Ekpene/Ugwuaji 330kV line 4 (cct K4U) CB tripped at Ikot-Ekpene T/S on distance O/C Red Phase, E/F & zone 1 trip relay, location = 137.42km.
- 7 16:56 – 17:11Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Microm: > Phase L1, TI>Phase L1, 2 & 3. LHR = 52Hrs.
- 8 18:52 – 19:13Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on microm relay > L1 & L2, TI> I1, 2 & 3. LHR = 62MW.
- 9 19:35 – 19:45Hrs, Ikorodu/Shagamu 132kV line CB tripped at Ikorodu T/S on O/C. LHR = 96MW.
- 10 20:25 – 21:42Hrs, Ikorodu/Shagamu 132kV line CB tripped at Ikorodu T/S on O/C 3 Phases. LHR = 60MW.

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

- 1 10:10 – 20:03Hrs, Mando/Kaduna town 132kV line 1 was taken out to allow LMD crew replace ACSR conductor with ACCC type and glass insulator with composite type. Load loss = 50MW.
- 2 10:51 - 13:25Hrs, Oke Aro/Ikeja West 330kV line 1 (cct K7W) was taken out for annual preventive maintenance on the terminal equipment at Ikeja West T/S. No load loss as cct K8W was in service.
- 3 12:30 - 14:38Hrs, Effurun T/S 60MVA 132/33kV transformer T21 was taken out for maintenance crew to carryout annual preventive maintenance on the CBs, Isolators and its associated equipment. Load loss = 30MW.
- 4 13:35 - 12:16Hrs, Mando/Zaria 132kV line was taken out at Mando T/S for maintenance crew to re – string cut sky wire between towers #236 & 238. Load loss = 80MW
- 5 14:16 - 20:21Hrs, Olorunsogo/Ayede 330kV line (cct R2A) was taken out for maintenance crew to replace broken composite insulators with new ones between tower # 438 – 439. No load loss as cct R1W was in service.

5(D) **URGENT OUTAGES:**

- 1 07:40 - 12:06Hrs, Delta GT13 was shut down for safe working space for maintenance crew to carry out maintenance test on GT14. Load loss = 20MW
- 2 09:09 - 20:08Hrs, Afam VI GT13 was shut down for safe working space for maintenance crew to carry out ESD tests on GT11. Load loss = 80MW
- 3 11:52 - 21:05Hrs, Olorunsogo NIPP GT1 was shut down to reduce load flow on cct R1W in preparation for the job on cct R2A. Load loss = 88MW
- 4 11:40 – 13:02Hrs, Afam T/S 162MVA 330/132/33kV transformer T1A was taken out for maintenance crew to seal point of oil leakage. Load loss = 46.7MW
- 5 11:57 - 21:05Hrs, Olorunsogo GT5 was shut down to reduce load flow on cct R1W in preparation for the job on cct R2A. Load loss = 33MW.
- 6 12:49 – 13:54Hrs, Ijebu Ode T/S 30MVA 132/33kV transformer T2 was taken out for maintenance crew to top up low oil level to normal. Load loss = 13MW.
- 7 13:03 – 14:52Hrs, Birnin- Kebbi/Sokoto 132kV line was opened on emergency due to pulled out Red phase incomer jumper. Load loss = 62MW.
- 8 13:53 through 24:00Hrs, Omotosho NIPP GT4 was shut down to reduce load flow on cct M5W. Load loss = 104.1MW

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

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

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

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:-** NIL.

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

6 **WEATHER REPORT:-** NIL

7 **INTERNATIONAL LINES:-**

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

Maximum load - 291MW at 12:00Hrs.  
Minimum load - 170MW at 17:00Hrs.

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

Maximum load - 92MW at 14:00Hrs.  
Minimum load - 59MW at 08:00Hrs.

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

Maximum load - 31.5MW at 20:00Hrs.  
Minimum load - 18.5MW at 05:00Hrs.

8 **MISCELLANEOUS:-**

- 1 06:11Hrs, Afam VI GT13 was tied. The unit was out due to gas constraint.
- 2 06:34 – 12:06Hrs, Delta P/S GT16 was shut down on frequency management. Load loss = 77MW
- 3 07:09Hrs, Odukpani NIPP GT2 was shut down on frequency management. Load loss = 80MW.
- 4 07:12Hrs, Jebba P/S 2G2 was shut down on frequency management. Load loss = 75MW
- 5 10:10Hrs, Afam VI GT11 was tied. The unit was out on gas constraint.
- 6 12:48Hrs, Odukpani NIPP GT5 was tied. The unit was out on maintenance
- 7 13:18Hrs, Afam VI GT12 was tied. The unit was out due to gas constraint
- 8 17:16Hrs, Odukpani generation reduced by 42MW to check load flow on Onitsha/Alaoji 330kV line (cct T4A).
- 9 18:41Hrs, Odukpani NIPP GT2 was tied. The unit was out on fault.
- 10 19:02Hrs, Jebba 2G4 was tied. The unit was out on frequency management.
- 11 19:09Hrs, Alaoji/Owerri 132kV line 1 was restored. The line was out on fault.
- 12 19:11Hrs, Alaoji/Owerri 132kV line 2 was restored. The line was out on fault.
- 13 **LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.**

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.

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	6	2
330kV	19	6	13
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.

14 THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

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/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 & 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





