

# TRANSMISSION COMPANY OF NIGERIA

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

**DAILY OPERATIONAL REPORT OF FRIDAY 11/05/2018**

**FOR: EVENTS OF THURSDAY 10/05/2018**

**1.0 EXECUTIVE OPERATIONS SUMMARY:**

**1.1 GENERATION PROFILE: NATIONAL STATISTICS**

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,780	21:30	10/05/18
GENERATION CAPABILITY	8070.4	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4821.4	-do-	-do-
PEAK GENERATION	4358.5	-do-	-do-
LOWEST GENERATION	2346.8	13:00	10/05/2018
8-HOURLY DURATION PEAK	4034.8	0100-0800	-do-
	2815.9	0900-1600	-do-
	4358.5	1700-2400	-do-
PEAK GENERATION TO DATE	5222.3	21:00	18/12/2017
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	06:00	14/04/2014
MAXIMUM ENERGY GENERATED (MWH) TO DATE	109,372.01	0000-2400	02/02/2016

**1.2 CRITICAL VOLTAGE**

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	330		
STATUTORY LIMITS	280.5 - 346.6		
HIGHEST VOLTAGE FOR THE DAY	358	Omotosho T/S	13:00
LOWEST VOLTAGE FOR THE DAY	299	Jos T/S	21:00

**1.3 FREQUENCY RANGE**

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.89	03:53
LOWEST FREQUENCY	49.87	19:06

**1.4 SYSTEM COLLAPSE UP DATE**

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 91											
Date of last partial collapse: 12 <sup>th</sup> April., 2018		No. of days since last partial collapse: 27											
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 240											
	Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total
2010	Total	---	3	1	--	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	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	16
	Partial	--	--	2	3	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	4	2	22
	Partial	--	--	--	--	--	--	--	2	--	--	--	2
2014	Total	2	--	--	2	0	3	1	0	0	1	0	9
	Partial	1	0	1	0	1	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	0	0	1	0	6
	Partial	--	--	1	0	2	0	--	0	0	1	0	4
2016	Total	--	--	2	3	6	5	0	0	1	1	2	22
	Partial	--	--	1	0	1	3	1	0	0	0	0	6
2017	Total	5	3	0	3	1	1	0	0	1	1	--	15
	Partial	1	0	1	0	0	0	1	0	3	--	--	9
2018	Total	5	1	0	--	--	--	--	--	--	--	--	6
	Partial	0	0	0	1	--	--	--	--	--	--	--	1

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	271	180
2 JEBBA	HYDRO	329	157
3 SHIRORO	HYDRO	412	114
4 EGBIN ST2 - 5	STEAM	332	226
5 SAPELE	STEAM	52	49
6 DELTA	GAS	487	160
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	65	60
9 OMOTOSHO GAS	GAS	140.2	107.3
10 OLORUNSOGO GAS	GAS	169.9	111.2
11 GEREGU NIPP	GAS	100	80
12 SAPELE NIPP	GAS	201.1	71.3
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	110.8	86.4
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	89.3	88.4
18 OKPAI	GAS	275	147
19 AFAM VI	GAS	402	212
20 IBOM POWER	GAS	104.7	80.3
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	58.1	18.9
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	130	80
26 AZURA - EDO IPP	(GAS)	449	150
27 EGBIN ST6	(GAS)	111	107
28 PARAS ENERGY	(GAS)	69.4	67
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4358.5</b>	<b>2346.8</b>

**1.6 ENERGY GENERATED/ENERGY SENT OUT:**

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	5124.00	213.50	5108.40	212.85
2 JEBBA	HYDRO	5339.00	222.46	5318.52	221.61
3 SHIRORO	HYDRO	5696.00	237.33	5674.17	236.42
4 EGBIN ST2 - 5	STEAM	7277.00	303.21	6847.60	285.32
5 SAPELE	STEAM	1026.20	42.76	1025.00	42.71
6 DELTA	GAS	10653.27	443.89	10459.00	435.79
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	1255.00	52.29	1234.54	51.44
9 OMOTOSHO GAS	GAS	3322.00	138.42	3295.00	137.29
10 OLORUNSOGO GAS	GAS	3281.50	136.73	3252.66	135.53
11 GEREGU NIPP	GAS	2066.50	86.10	2053.86	85.58
12 SAPELE NIPP	GAS	3354.34	139.76	3330.23	138.76
13 ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2265.20	94.38	2243.30	93.47
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2150.00	89.58	2132.09	88.84
18 OKPAI	GAS	4415.00	183.96	4340.00	180.83
19 AFAM VI	GAS	6428.14	267.84	6326.35	263.60
20 IBOM	GAS	1809.77	75.41	1801.00	75.04
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6376.35	265.68	6355.40	264.81
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	842.70	35.11	818.80	34.12
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	3016.90	125.70	3010.56	125.44
27 EGBIN ST6	STEAM	2702.00	112.58	2543.60	105.98
28 PARAS ENERGY	GAS	1448.80	60.37	1440.20	60.01
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>79,849.67</b>	<b>3,327.07</b>	<b>78,610.28</b>	<b>3,275.43</b>

1.7A GENERATION POSITION AT 06:00HRS OF FRIDAY 11/05/2018

	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 & 12 3	340	290	1G5, 6 & 12 3	290	241	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. 1G11 - Out on maintenance.
	JEBBA HYDRO	6	2G1 - 3 & 5 4	380	380	2G1, 3 & 5 3	285	247	2G2 - Out on frequency management. 2G4 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1, 2 & 4 3	450	346	411G2 - Generation reduced on frequency management. 411G3 - Out on maintenance.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	880	ST2 & 4 2	267	267	ST1 & 5 - Out on frequency management. ST3 - Tripped on high vibration since 19th June 2017.
	SAPELE (STEAM)	6	ST2 1	120	50	ST2 1	50	50	ST1 - Tripped on low drum level. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 15, 16 & 18 - 20 6	535	535	GT7, 15, 16 & 18 - 20 6	515	503	GT3 & 5 - Out due to generator winding fault. GT4 & 9 - 13 - Out on 125V battery bank problem. GT6 & 14 - Out on major overhaul. GT15 - On frequency response. GT17 - Out on excitation trouble.
	AFAM IV & V (GAS)	8	GT18 1	75	62	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Tripped on loss of excitation. GT18 - Tripped on loss of gas pressure. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 1	145	60	GT11 & 13 - Out due to gas constraint. GT12 - Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 5 - 8 5	190	153.5	GT2 - 4 - Out on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 4 - 6 & 8 5	190	140	GT2, 3 & 7 - Out on frequency management. Generation reduced on frequency management.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT22 1	145	90	GT21 & 23 - Out due to gas constraint. GT22 - Generation reduced due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	112.5	225	GT1 & 3 2	225	173.3	GT2 - Shut down due to air inlet differential pressure. GT4 - Tripped on fire protection.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Tripped due to low gas pressure. GT3 - Shut down due to generator air inlet filter trouble.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT2 1	120	98.9	GT1 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Tripped on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.
	IHOVBOR NIPP	4	GT2 1	112.5	112.5	GT2 1	112.5	89.7	GT1 & 4 - Out on maintenance. GT3 - Tripped on bleed inlet valve position.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Shut down due to staff on strike.
	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	375	375	GT11 & 12 2	300	173	GT12 - Generation reduced on frequency management. ST18 - Shut down on frequency management.
	AZURA - EDO	3	GT11 - 13 3	450	450	GT11 - 13 3	450	340	GT11 - Generation reduced on frequency management.
IPP	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	640	640	GT11 - 13 3	450	380	ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	81.4	GT1 & 2 - Out on fault. Generation reduced due to line constraint
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	1	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2 & 5 3	75	60	GT1, 2 & 5 3	60	59.2	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1 & 2 2	50	40	0 0	0	0	GT1 & 2 - Out due to line constraint since 03/04/2018. GT3 - Out on fault. GT4 - Tripped on generator differential lockout.
	RIVERS	1	GT1 1	180	160	GT1 1	160	135	GT1 - Generation reduced on frequency management.
	<b>SUB TOTAL</b>	<b>130</b>	<b>76</b>	<b>7909.5</b>	<b>7725</b>	<b>47</b>	<b>4519.5</b>	<b>3628</b>	Frequency = 50.35Hz.

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 11/05/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	ST6		ST6		111	111	Available unit on bar.
		1	220	111	111			
EGBIN	1	1	220	111	111	111	111	Available unit on bar.
PARAS ENERGY	8	GT2 - 9	69.4	69.4	GT2 - 9	69.4	69.4	Available units on bar.
		8			8			
<b>SUB TOTAL</b>		<b>9</b>	<b>289.4</b>	<b>180.4</b>	<b>9</b>	<b>180.4</b>	<b>180.4</b>	
<b>GRAND TOTAL</b>		<b>139</b>	<b>8198.9</b>	<b>7905.4</b>	<b>56</b>	<b>4,699.90</b>	<b>3,808.40</b>	Frequency = 50.35Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 10/05/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY				
OGBA	U-STEEL			
	PTCEXPRESS			
	SANKYO			
	FEEDER 8			
IKORODU	PULK IT			
	INDUSTRIAL			
	SPINTEX			
	DANGOTE			
	LAND CRAFT			
ALAUUSA	TR4 15MVA			
	TR5 -15MVA			
	ALAUUSA			
MLAND	PTC (MARYLAND)			
	LORDSMITH (PAPALANTO)			
	<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	19:00	21	Out due to outage of Ikorodu/Shagamu 132kv line.

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF THURSDAY 10/05/2018

COMPANY NAME	VOLTAGE LEVEL	EXPECTED CONTRACTUAL LOAD (MW)	MAX	TIME	HOURLY IN SERVICE	REMARK
INNER GALAXY	132kV line	25	ON	ON	24	On soak
KAM STEEL		15	4.2	05:00	24	Nil
OLAM FLOUR MILLS	33kV feeder	3	2.1	19:00	24	Nil
LORDSMITH		3	0.4	2:00	24	Nil

**1.8 HYDROLOGICAL DATA: FRIDAY 11/05/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.68	99.90	366.26
TAIL WATER ELEVATION (METERS)	102.05	74.0	270.80
GROSS OPERATING HEAD (METERS)	<b>31.63</b>	<b>25.90</b>	<b>95.46</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	752.00	960.00	299.00
AVERAGE SPILLAGE (M3/SEC)	93.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>845</b>	<b>960</b>	<b>299</b>
COMPUTED INFLOW (M3/SEC)	179.00	890.00	316.00
STORAGE DIFFERENTIAL	<b>-666.00</b>	<b>-70</b>	<b>17</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 10/05/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	533.90	22:00	761.87	240.9	13:00
EKO	424.70	22:00	658.04	294	13:00
IKEJA	464.3	02:00	614.76	51.3	05:00

**2.0 GAS POSITION: FRIDAY 11/05/2018**

STATION	SIGNED ACQ Annual Contracted Quantity MMSCFD	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCFD)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EGBIN P/S		1100		378	722
DELTA (GAS)	465	915		515	400
OMOTOSHO GAS	102.1	336.8		190	146.8
OMOTOSHO NIPP	192.6	500		120	380
OLORUNSOGO (GAS)	140.4	336		190	146
OLORUNSOGO NIPP	161.1	750		0	750
SAPELE NIPP	80.5	500		225	275
SAPELE STEAM	47	720		50	670
AFAM I/V	53	300		0	300
AFAM VI	110	650		450	200
GEREGU GAS	125	435		145	290
GEREGU NIPP	90	435		145	290
OKPATIGAS/STEAM	167	480		300	180
ALACUJI NIPP	0	504		0	504
IHOVBOR NIPP	90.6	450		112.5	337.5
IBOM	92.2	198		115	83
ODUKPANI NIPP	0	625		0	625
<b>TOTAL</b>	<b>2321.5</b>	<b>9235.72</b>		<b>2935.5</b>	<b>6299.3</b>

1 MMSCF IS EQUIVALENT TO 3.78MW

**3.0 SPINNING RESERVE FOR : THURSDAY 10/05/2018**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF FRIDAY 11/05/2018 0MW FREQUENCY 50.35Hz**

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	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 UNAVAILABLE GENERATION CAPABILITY**

The unavailable generation capability for Friday 11/05/2018 as at 0600Hrs was = **3247.6MW**.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Omotosho NIPP GT1 & 4	240	0	240	2077
2	Alacuji NIPP GT1, 2 & 4	360	0	360	
3	Geragu NIPP GT21 - 23	435	90	345	
4	Olorunsogo NIPP GT1 - 3	360	0	360	
5	Geragu Gas GT11 - 13	360	60	300	
6	Odokpani NIPP GT4 & 5	230	0	230	
7	Afani VI ST10	190	0	190	
8	Afani IV GT18	52	0	52	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1679.81MMSCF OF GAS (EQUIVALENT TO 6299.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Trans-Amadi GT1 & 2	40	0	40	73.6
2	Ikom GT3	115	81.4	33.6	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Azura GT11	150	0	150	1097
2	Jebba 2G2	95	0	95	
3	Olorunsogo Gas GT2: 3 & 7	114	0	114	
4	Omotosho Gas GT2 - 4	114	0	114	
5	Egbin ST1 & 5	345	0	345	
6	Shiroro 411G2	150	64	86	
7	Okpai GT12 & ST18	225	57	168	
8	Rivers GT1	160	135	25	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
				0	
<b>Grand Total</b>					<b>3247.6</b>

5.0 **OUTAGES:-**

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

- 00:02Hrs, Omoku P/S GTs 1, 2 & 5 tripped on reverse power due to the tripping of Alaoji/Afam 132kV line 2. Total LHR = 55.1MW. 01:00Hrs - GT2 was tied, 15:43Hrs - GT5 was tied, 17:14Hrs - GT1 was tied.
- 12:55 through 24:00Hrs, Delta GTs 9 – 13 tripped due to DC failure. LHR = 60MW.
- 14:12Hrs, Paras Energy GT3 – 9 was shut down due to outage on Ikorodu/Shagamu 132kV line. Total Load loss = 68.6MW. 17:14Hrs - GT2 was tied, 17:16Hrs - GT3 was tied, 17:19Hrs - GT4 was tied, 17:21Hrs - GT5 was tied, 17:23Hrs - GT6 was tied, 17:24Hrs - GT7 was tied, 17:27Hrs - GT8 was tied, 17:29Hrs - GT9 was tied.
- 15:30 through 24:00Hrs, Delta GT4 tripped on excitation major trouble. LHR = 15MW.

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

- 00:02 – 00:25Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom relay – 1< L1 – 2 and B1 < L 1 – 3. LHR = 46MW.
- 01:29 – 12:59Hrs, Dan-Agundi T/S 60MVA 132/33kV transformer TR3 primary CB tripped on differential relay. LHR = 30.4MW.
- 02:53 – 05:09Hrs, Zaria/Dangora 132kV line CB tripped at Dangora T/S on distance protection relay, stages 1 & 2 B phase, distance protection phase fault Yellow & Blue Phases. LHR = 0.6MW.
- 03:45 – 04:14Hrs, Jos/Gombe 330kV line (cct S1E) CB tripped at Jos T/S on SEL Relay, shot IP = 0, 3P = 0, BK1 & BK2 open. No load loss as cct M1E was in service.
- 03:45 – 11:37Hrs, Makurdi/Jos 330kV line 2 (cct A2S) CB tripped at Jos T/S on SEL Relay, O/V, shot IP = 0, 3P = 0, BK1 & BK2 = open. No load loss as cct M2S was in service.
- 03:51 – 05:30Hrs, Onitsha/New Haven 330kV line (cct T3H) CBs tripped at both ends on the following relay indications:  
At Onitsha T/S: Optimho Relay – Zone 1, instantaneous trip 3phases.  
At New Haven T/S: On instantaneous trip, 3phases (87) zone 1. LHR = 109MW.
- 03:51 – 14:15Hrs, Uguwaji T/S 150MVA 330/132/34.5kV transformer T1 primary CB tripped on REF. LHR = 0.4MW.
- 03:52 – 04:16Hrs, Alaoji/Ikot Ekpene 330kV line 1 (cct A1K) CB tripped at Alaoji T/S on distance protection zone 1, Phases A, B & C, location = 129.42km. LHR = 161MW.
- 04:05 – 16:41Hrs, Alagbon T/S 60MVA 132/33kV transformer TR1 primary & secondary CBs tripped on the following relays.  
On primary CB: REF.  
On secondary CB: Tripped on O/C Red & Blue Phases and E/F. LHR = 26MW.
- 09:50 – 11:10Hrs, Benin/Egbin 330kV line (cct B6N) CB tripped at Benin T/S on the following relay indications:  
ABB Relay: Trip-trip, trip, trip – TRL3, VHS-STFWL3, PHS-STFWPE, ZM – trip, EFC-CS, AR in progress, DEF – block, ZM3 – start, ZM3 – start, ZCIP-CSL3, HS-TRL3, fault loop = L3-N, distance = 140km. No load loss as ccts B5M & M5V were in service.
- 12:28 – 12:40Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Siemens Relay: Yellow & Blue Phases PU. LHR = 15.1MW.
- 12:46 through 24:00Hrs, McPherson 40MVA 132/33kV Mobitra primary and secondary CBs tripped on differential relay, general trip and REF trip. LHR = 0.1MW.

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

- 09:30 – 14:02Hrs, Ikeja West 330kV 75MX Reactor R2 was taken out for annual preventive maintenance on its CB and isolators.
- 09:36 – 14:55Hrs, Shiroro 411G3 was taken out for annual preventive maintenance. No load loss as the unit was out on frequency management.
- 10:10 – 18:37Hrs, Osogbo T/S 60MVA 132/33kV transformer 4T3 was taken for annual preventive maintenance on the transformer and its associated equipment. No load loss as 60MVA 132/33kV transformer 4T4 was in service.
- 11:15 – 18:34Hrs, Ikeja West/Akangba 330kV line 2 (cct W4L) was taken out to remove a cut dangling optic fibre cable between towers #531 – 533. No load loss as cct W3L was in service.

5(D) **URGENT OUTAGES:**

- 12:37 – 17:05Hrs, Ikorodu/Shagamu 132kV line was taken out to disconnect SMC steel Company as instructed by MD TCN. LHR = 44MW.

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

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A2K, U2A & A1S.

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** NIL

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts K3U & S5B.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J, J2H & F1K.

6 **WEATHER REPORT:-** Rainfall was reported at Kainji, Afam, Alaoji, Osogbo, Jos, Gombe, Makurdi, Katampe, Kano, Kaduna, New Haven, Onitsha & Uguwaji.

7 **INTERNATIONAL LINES:-**

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

Maximum load - 274MW at 21:00Hrs.  
Minimum load - 191MW at 17:00Hrs.

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

Maximum load - 107MW at 12:00Hrs.  
Minimum load - 86MW at 20:00Hrs.

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

Maximum load - 35.5MW at 01:00Hrs.  
Minimum load - 16.8MW at 21:00Hrs.

8 **MISCELLANEOUS:-**

- 00:03Hrs, Shiroro P/S 411G3 generation reduced by 100MW on frequency management.

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

GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .

GROUP 2A - UNITS FROM ODUKPANI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSOGO POWER PLC AND OMOTOSHO POWER PLC.

GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.

GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.

GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTACTED FOR THE ANCILLARY SERVICE).

GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).

GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

**11 (A) COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	32
OPTIC FIBRE	13	10
PLS	14	0

**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	79	23

- 2 00:04 - 18:32Hrs, Jebba 2G2 was shut down on water management. Load loss = 75MW.
- 3 01:18Hrs, Shiroro P/S 411G2 generation reduced by 100MW on frequency management.
- 4 02:16 - 20:21Hrs, Afam VI GT11 was shut down on frequency management. Load loss = 116MW.
- 5 02:22 - 13:25Hrs, Azura –Edo GT12 was shut down on frequency management. Load loss = 131MW.
- 7 03:09Hrs, Delta P/S generation reduced by 50MW on frequency management.
- 8 03:22 - 14:17Hrs, Jebba 2G3 shut down on frequency management. Load loss = 73MW.
- 9 03:52Hrs, Ikot-Ekpene, Odukpai, Adiabior, Ugwuaji, New Haven & Makurdi T/S lost supply due to tripping of ccts A1K, T3H & A2S.
- 10 04:01Hrs, Okpai P/S generation reduced by 50MW on frequency management.
- 11 04:08 through 24:00Hrs, Benin/Ajaokuta 330kV line 1 (cct B11J) was taken out on voltage control. V/P = 342/338kV.
- 12 04:18 - 22:04Hrs, Omotosho P/S GT5 shut down on frequency management. Load loss = 35.2MW.
- 13 04:25 - 22:33Hrs, Shiroro/Mando 330kV line 2 (cct R2M) was taken out on voltage control. V/P = 355/352kV.
- 14 04:29 through 24:00Hrs, Jebba/Shiroro 330kV line 2 (cct J7R) was taken out on voltage control. V/P = 341/340kV.
- 15 04:44 through 24:00Hrs, Lokoja/Gwagwalada 330kV line 2 (cct L7G) was taken out on voltage control. V/P = 358/353kV.
- 16 04:49Hrs, Mando T/S 330kV 75MX Reactor R1 was switched in to service on voltage control. V/P = 353/351kV.
- 17 05:47 through 24:00Hrs, Olorunsogo P/S GT2 was shut down on frequency management. Load loss = 27MW.
- 18 06:12 - 18:29Hrs, Delta GT19 was shut down on frequency management. Load loss = 54MW.
- 19 06:48 - 16:54Hrs, Shiroro 411G4 was shut down on frequency management. Load loss = 50MW.
- 20 08:26 - 18:41Hrs, Delta GT16 was shut down on frequency management. Load loss = 74MW.
- 21 11:12 - 17:28Hrs, Delta GT18 was shut down on frequency management. Load loss = 60MW.
- 22 11:26 - 18:21Hrs, Sapele NIPP GT1 was shut down on frequency management. Load loss = 79.2MW.
- 23 12:35 through 24:00Hrs, Egbin ST5 was shut down on frequency management. Load loss = 111MW.
- 24 13:35H - 19:44Hrs, Azura GT13 was shut down. No load loss as 75MW was transferred to GT12.
- 25 20:28Hrs, Olorunsogo GT8 was tied. The unit was out on frequency management.

\*\*\*\*\* LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.  
 \*\*\*\*\* THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

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

**SHIRORO REGION:**

- 1 Birnin Kebbi 75MX Reactor R1.

**ABUJA REGION**

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

**KADUNA REGION:**

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

**BAUCHI REGION:**

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

**ENUGU REGION:**

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

**LAGOS REGION:**

- 1 Oke-Aro T/S 75MX Reactor R1.

**PORT HARCOURT REGION**

- 1 Ikot-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.

**BENIN REGION:**

- 1 Omotosho T/S 330kV, 2nd series 330kV CB #3322 out due to control circuit problem.

**ENUGU REGION:**

- 1 New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 2 Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the transformers are protected by Nkalagu 132kV line CB.
- 3 Oji River T/S 30MVA 132/33kV transformer T1A primary CB - The breaker is completely out of service and bypassed. The transformer is either protected by Onitsha/Oji 132kV line CB or New Haven/Oji 132kV line CB.
- 4 Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.

**SHIRORO REGION**

- 1 Jebba T/S 75MX reactor 2R2 CB - exploded.

**PORT HARCOURT REGION**

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

**12(C) LAGOS REGION**

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

**12(D) UNAVAILABLE CAPACITOR BANK:**

- 1 (i) Ogba T.S, (ii) Maiduguri T/S, (iii) Isolo T/S, (iv) Ado-Ekiti T/S, (v) Ilorin T/S, (vi) Akure T/S.

**LAGOS REGION**

- 1 Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- 2 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 3 330kV Ikeja West/Osogbo line. - 95 spans.
- 4 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 5 Ikeja West/Akangba 330kV line 2 - 1 span.
- 6 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 7 Akangba/Iire 132kV lines 1 & 2 - 1 span.
- 8 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 9 Ikeja West/Otta 132kV lines 1 & 2- 17 spans.

**SHIRORO REGION**

- 1 Jebba T/S 330kV Osogbo lines 1 & 2 and Ganmo line - 9 spans
- 2 Minna T/S 132kV Bida line - 32 spans
- 3 Shiroro T/S 330kV Jebba line 2 - 28 spans

**ABUJA REGION**

- 1 Apo T/S 132kV Keffi line - 36 spans

**12 (E) 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





