

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF TUESDAY 04/12/2018
FOR: EVENTS OF MONDAY 03/12/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,000	21:45	03/12/2018
GENERATION CAPABILITY	4656.9	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4537.5	-do-	-do-
PEAK GENERATION	4455.3	-do-	-do-
LOWEST GENERATION	3567.8	04:00	03/12/2018
8-HOURLY DURATION PEAK	4031.2	0100-0800	-do-
	4360.3	0900-1600	-do-
	4455.8	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	355	New Haven & Lokoja T/S	03:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso & Gombe T/S	05:00 & 06:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.68	08:34
LOWEST FREQUENCY	49.47	14:37

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Sept, 2018		No. of days since last total collapse: 74												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 235												
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	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	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
2018	Total	5	1	0	0	0	1	1	--	2	--	--	--	10
	Partial	0	0	0	1	0	--	--	0	--	--	--	--	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	422	342
2 JEBBA	HYDRO	426	413
3 SHIRORO	HYDRO	436	180
4 EGBIN ST2 - 5	STEAM	368	353
5 SAPELE	STEAM	104	86
6 DELTA	GAS	405	365
7 AFAM IV-V	GAS	0	42
8 GEREGU GAS	GAS	372	291
9 OMOTOSHO GAS	GAS	132.6	135.9
10 OLORUNSOGO GAS	GAS	204	167.1
11 GEREGU NIPP	GAS	124	123
12 SAPELE NIPP	GAS	0	0
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	105	94
16 ODUKPANI NIPP	GAS	342.5	232.4
17 IHOVBOR NIPP	GAS	0	0
18 OKPAI	GAS	156	100
19 AFAM VI	GAS	0	0
20 IBOM POWER	GAS	108.8	69.7
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	81.6	74.7
24 TRANS AMADI	GAS	41.7	41
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	448	275
27 EGBIN ST6	(GAS)	110	116
28 PARAS ENERGY	(GAS)	68.6	67
29 GBARAIN NIPP	GAS	0	0
TOTAL		4455.8	3567.8

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	10218.00	425.75	10202.70	425.11
2 JEBBA	HYDRO	10122.00	421.75	10099.44	420.81
3 SHIRORO	HYDRO	8277.00	344.88	8244.55	343.52
4 EGBIN ST2 - 5	STEAM	8792.00	366.33	8296.20	345.68
5 SAPELE	STEAM	2041.30	85.05	1939.60	80.82
6 DELTA	GAS	9259.94	385.83	9187.30	382.80
7 AFAM IV-V	GAS	338.00	14.08	334.04	13.92
8 GEREGU GAS	GAS	8287.10	345.30	8255.92	344.00
9 OMOTOSHO GAS	GAS	3193.00	133.04	3169.30	132.05
10 OLORUNSOGO GAS	GAS	4448.75	185.36	4416.76	184.03
11 GEREGU NIPP	GAS	2918.87	121.62	2905.34	121.06
12 SAPELE NIPP	GAS	0.00	0.00	0.00	0.00
13 ALAOJI 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	2355.10	98.13	2333.20	97.22
16 ODUKPANI NIPP	GAS	6960.81	290.03	6921.21	288.38
17 IHOVBOR NIPP	GAS	0.00	0.00	0.00	0.00
18 OKPAI	GAS	3090.00	128.75	3000.00	125.00
19 AFAM VI	GAS	0.00	0.00	0.00	0.00
20 IBOM	GAS	2229.81	92.91	2221.00	92.54
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	9086.00	378.58	9058.60	377.44
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1955.60	81.48	1906.15	79.42
25 TRANS AMADI	GAS	971.90	40.50	943.10	39.30
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	2688.00	112.00	2550.80	106.28
28 PARAS ENERGY	GAS	1642.10	68.42	1637.70	68.24
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
TOTAL		98,875.28	4,119.80	97,622.91	4,067.62

1.7A GENERATION POSITION AT 06:00HRS OF TUESDAY 04/12/2018

	STATIONS	NO OF UNITS INSTALLED	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) AT 50.29Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	422	418	1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 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	476	470	2G1 - 5 5	455	438	2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1, 2 & 4 3	450	356	411G1 - Generation reduced due to water management. 411G3 - Out on fault.
	EGBIN STEAM	6	ST2, 4, 5 & 6 4	880	477	ST2, 4, 5 & 6 4	477	477	ST1 - Out due to undisclosed fault since 04/09/2018. ST3 - Out on high vibration since 19th June 2017. Available units on bar.
	SAPELE (STEAM)	6	ST2 1	120	50	ST2 1	50	50	ST1 & 3 - Tripped on low drum level. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9, 11 - 13, 15, 16 & 19 & 20 10	545	545	GT7, 9 - 13, 15, 19 & 20 9	430	417	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT16 - Out due to low load demand by the Discos. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT11 - 12 - De-commissioned and scrapped. GT13,14 & 16 - Out on blade failure. GT17 - Out due to gas constraint. GT18 - Out due to maintenance. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	372	GT11 & 12 - Generation reduced due to low load demand by the Discos. GT13 - Generation reduced due to inlet gas valve controller problem.
	OMOTOSHO GAS	8	GT1, 4, 6 & 7 4	152	152	GT1, 4, 6 & 7 4	135.8	135.8	GT2, 3, 5 & 8 - Out due to gas constraint. Available units on bar.
	OLORUNSOGO GAS	8	GT1, 2, 5 - 8 6	228	228	GT1, 2, 5 - 8 6	209.3	209.3	GT3 & 4 - Out due to gas constraint. Available units on bar.
NIPP	GEREGU NIPP	3	GT22 1	145	145	GT22 1	145	126	GT21 - Out on maintenance. GT23 - Out due to gas constraint.
	SAPELE NIPP	4	0 0	0	0	0 0	0	0	GT1 & 3 - Out due to low gas pressure. GT2 - Out on maintenance. GT4 - Out due to high air filter differential pressure.
	ALAOJI NIPP GAS	4	0 0	0	0	0 0	0	0	GT1 - Out on maintenance. GT2 - Out due to low gas pressure. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	0 0	0	0	0 0	0	0	GT1 & 2 - Shut down due to low gas pressure. GT3 - Out due to maintenance. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT2 1	125	120	GT2 1	120	103.4	GT1, 3 & 4 - Out due to gas constraint.
	ODUKPANI NIPP	5	GT3 - 5 3	360	350	GT3 - 5 3	349.1	349.1	GT1 - Out on fault. GT2 - Out due to gas leakage.
	IHOVBOR NIPP	4	0 0	0	0	0 0	0	0	GT1, 2 & 4 - Out due to gas station maintenance. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out on maintenance.
IPP	OKPAI GAS/STEAM	3	GT12 1	160	160	GT12 1	160	160	GT11 & ST18 - Out due to gas constraint. Available unit on bar.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	325	GT13 - Generation reduced due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	0 0	0	0	0 0	0	0	GT11 - Out on type C inspection. GT12, 13 & ST10 - Out due to maintenance at gas station.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	100.1	GT1 & 2 - Out due to fire outbreak on the control panel.
	AES	9	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2, 3 & 5 4	100	72.7	GT1, 2, 3 & 5 4	72.7	72.7	GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1 & 2 2	42	42	GT1 & 2 2	42	42	GT4 - Out due to gas constraint. GT3 - Out on fault. Available units on bar.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out due to gas constraint
SUB TOTAL	141	56	5234	4712.7	55	4528.9	4151.4	Frequency = 50.29Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF TUESDAY 04/12/2018 FOR UNITS ON BILATERAL AGREEMENT

PARAS ENERGY	8	GT2 - 9 8	70	68.6	GT2 - 9 8	68.6	68.6	Available units on bar.
SUB TOTAL	8	8	70	68.6	8	68.6	68.6	
GRAND TOTAL	149	64	5304	4781.3	63	4,597.50	4,220.00	Frequency = 50.29Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - MONDAY 03/12/2018							
		EGBIN 5T6 5MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY							
FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK		
OGBA	U-STEEL	ON	0100HRS			24		NIL	
	PTCEXPRESS	ON	0100HRS			24		NIL	
	SANKYO	5	1300HRS			24		NIL	
	FEEDER 8	17	1400HRS			24		NIL	
IKORODU	PULK IT	1	0300HRS			24		NIL	
	INDUSTRIAL	9	0800HRS			24		NIL	
	SPINTEX	2	2300HRS			24		NIL	
	DANGOTE	ON	0100HRS			24		NIL	
	LAND CRAFT	45	2000HRS			23		O/S DUE TO LINE FAULT	
ALAUSA	TR4 15MVA	8.7	1000HRS			24		NIL	
	TR5 -15MVA	6.4	1000HRS			24		NIL	
	ALAUSA	17.5	1000HRS			24		NIL	
M/LAND	PTC (MARYLAND)	17	0700HRS			24		NIL	
	TOTAL LOAD	113.2							

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF MONDAY 03/12/2018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	69.4	09:00	67	04:00	24	1636.8	NIL.

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: MONDAY 03/12/2018									
COMPANY NAME	VOLTAG E LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	ON	ON	ON	ON	ON	ON	SUPPLY NOT INTERRUPTED
KAM STEEL		25.0	1.5	16:00	0.1	01:00	24	6.6	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	10	01:00	2.8	16:00	24	163.3	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	17.4	09:00	0.6	02:00	23	270.9	SUPPLY NOT INTERRUPTED
XING 2		0	27	18:00	0.9	01:00	24	377.7	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	5	09:00	1.3	03:00	24	65.8	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	1.7	24:00	0.1	01:00	23	14.1	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.3	06:00	0.3	24:00	24	7.2	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: TUESDAY 04/12/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.52	101.94	379.61
TAIL WATER ELEVATION (METERS)	104.32	74.7	270.8
GROSS OPERATING HEAD (METERS)	37.20	27.24	108.81
AVERAGE TURBINE DISCHARGE (M3/SEC)	1266.00	1722.00	366.00
AVERAGE SPILLAGE (M3/SEC)	446.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1712.00	1722.00	366.00
COMPUTED INFLOW (M3/SEC)	1140.00	1722.00	123.00
STORAGE DIFFERENTIAL	-572.00	0	-243
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355.00

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT MONDAY 03/12/2018

	ABUJA	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
	517.2	15:00	477.81	367.7	04:00
EKO	DATA NOT AVAILABLE FROM EKO DISCO.				
IKEJA	568.0	01:00	623.24	442	24:00

2.0 GAS POSITION: TUESDAY 04/12/2018

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	457	1100		477	623
DELTA (GAS)	453	915		430	485
OMOTOSHO GAS	135.2	336.8		135.8	201
OMOTOSHO NIPP	96.3	500		120	380
OLORUNSOGO (GAS)	203.6	336		209.3	126.7
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	0	500		0	500
SAPELE STEAM	50	720		50	670
AFAM IV-V	0	300		0	300
AFAM VI	0	650		0	650
GERESU GAS	360	435		435	0
GERESU NIPP	127	435		145	290
OKPANI (GAS/STEAM)	151	480		160	320
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	94.8	337.5		0	337.5
IBOM	93.8	198		115	83
ODUKPANI NIPP	0	625		349.1	275.9
TOTAL	2221.7	9122.30		2626.2	6496.1

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : MONDAY 03/12/2018

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

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	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Tuesday 04/12/2018 as at 0600Hrs was = 292MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO LINE CONSTRAINTS					
			0	0	0
			0	0	
			0	0	
			0	0	
4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS					
			0	0	202
1	Delta GT16	100	0	100	
2	Geregu Gas GT11 & 12	290	266	24	
2	Azura-Edo GT13	153	75	78	
				0	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G1	150	60	90	90
					0
Grand Total					292

5.0 **OUTAGES:**

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

- 1 21:59 through 24:00Hrs, Sapele Steam ST3 tripped on low drum level. LHR = 54MW

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

- 1 06:49 – 06:51Hrs, Daura T/S 30/40MVA 132/33kV transformer T2 primary & secondary CBs tripped on E/F. LHR = 6.2MW
- 2 11:48 – 12:07Hrs, Osogbo/Ikeja-West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:
At Osogbo T/S:
Siprotec relay: Main relay, relay trip, Red phase, zone 1 trip, E/F, PULP L1, PU time = 64ms, trip time = 4ms, distance = 148.5km
Omega relay: Zone 1 trip, phase A, E/F aided trip, carrier received 2, 86A/2, distance = 114.01km,
Auxiliary relay: 86 X 2 & tripping 86T
At Ikeja-West T/S:
Micom relay: General trip, Red phase fault, zone 1 trip, carrier sent, started phase A-N, trip phase A, start element distance, E/F IN>1, distance trip zone 1, fault duration = 788.97ms, trip time = 80.73ms, fault location = 102.6km
Siprotec relay: General trip, Red phase zone 1 trip, Z com trip, 21 pickup AG, PU time = 69ms, trip time = 4ms, distance = 101.2km. No load loss as ccts R1W, H2A & R2A were in service.
- 3 13:31 – 13:56Hrs, Egbin/Ikorodu 132kV line 1 CB tripped at Egbin T/S on distance protection relay, distance = 100.6km. LHR = 4MW
- 4 17:50 through 24:00Hrs, Odukpai/Ikot-Ekpene 330kV line (cct D2K) CB tripped at Ikot-Ekpene T/S on pole discordance. No load loss as cct D1K was in service.
- 5 19:08 through 24:00Hrs, Itire T/S 30MVA 132/33kV transformer T1 primary and secondary CBs tripped on SBEF. LHR = 12MW.

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

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

- 1 08:36 through 24:00Hrs, Afam IV GT17 was shut down due to low gas pressure. Load loss = 30MW
- 2 10:48 - 12:12Hrs, Omotosho T/S 150MVA 330/132/33kV auto transformer was taken out to build up low SF6 gas pressure of Blue phase pole of bus bar 2 CB# 3313 to normal. No load loss as the transformer was on soak.
- 3 14:45 - 15:12Hrs, Akangba/Ojo 132kV line 2 was taken out due to high load on cct M5W. Load loss = 53MW.
- 4 18:43 through 24:00Hrs, Eket T/S 60MVA 132/33kV transformer T2B was taken out due to buchholz trip alarm that came up and failed to rest on the 200KVA 33/0.145kV GT2B. Load loss = 4MW

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.

5 (E) **EMERGENCY OUTAGES:-** The under mentioned lines were opened on frequency control.

- 1 14:37 - 14:48Hrs, Ayede/Jericho 132kV line. Load loss = 32MW. Frequency was 49.47Hz.
- 2 18:59 - 19:32Hrs, Ayede/Ibadan North/Two/Iseyin 132kV line. Load loss = 55MW. Frequency was 49.67Hz.
- 3 20:15 - 20:30Hrs, Akangba/Ojo 132kV line 2. Load loss = 37MW. Frequency was 49.57Hz.
- 4 20:21 - 20:30Hrs, Akangba/Itire 132kV line 1. Load loss = 29MW. Frequency was 49.47Hz.
- 5 21:13 - 21:17Hrs, Gombe/Bauchi 132kV line. Load loss = 24MW. Frequency was 50.17Hz.

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 A1K.

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts D3T, J2H, D2K, K3U & K4U

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

6 **WEATHER REPORT:-** NIL

7 **INTERNATIONAL LINES:-**

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

Maximum load - 298MW at 19:00Hrs.

Minimum load - 218MW at 18:00Hrs.

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

Maximum load - 187MW at 17:00Hrs.

Minimum load - 59MW at 04:00Hrs.

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

Maximum load - 29.0MW at 20:00Hrs.

Minimum load - 14MW at 11:00Hrs.

8 **MISCELLANEOUS:-**

- 1 01:03Hrs, Delta GT16 was shut down due to low load demand by the Discos. Load loss = 68MW
- 2 01:23Hrs, Odukpai NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 112MW
- 3 03:12Hrs, Lokoja/Gwagwalada 330kV line 2 (cct L7G) was taken out on voltage control. V/P = 354/352kV

- 4 11:10Hrs, Odukpai NIPP GT5 was tied. The unit was out due to gas constraint.

- 5 16:06Hrs, Shiroro G/S reduced generation by 100MW due to low load demand by the Discos.

**** **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.**

GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED 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).

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	34
OPTIC FIBRE	13	10
PLS	14	4

11 SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	6	13
132kV	102	82	20

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

- Birnin Kebbi 75MX Reactor R1.

ABUJA REGION

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

KADUNA REGION:

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

BAUCHI REGION:

- Gombe T/S -30MX Reactor R2A.

ENUGU REGION:

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

LAGOS REGION:

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

PORT HARCOURT REGION

- Ikot-Ekpene T/S: No reactor installed.

12 (B) UNAVAILABLE BREAKERS/ISOLATORS

LAGOS REGION:

- Akangba T/S. 132kV Bus Coupler CB - Serious Air leakage.(Undergoing repair)
- Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- Otta/Ogba 132kV line isolator - defective control shaft.
- Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole .
- Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.

BENIN REGION:

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

ENUGU REGION:

- New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 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.
- 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.
- Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.
- New Haven/Nkalagu 132kV line 2 ground switch - Canibalized Red phase female contact and canibalized Yellow phase male contact.

SHIRORO REGION

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

12(D) 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(E) UNAVAILABLE SKYWIRES

LAGOS REGION

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

SHIRORO REGION

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

ABUJA REGION

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

12 (F) UNAVAILABLE SYNCHROSCOPES :

- Ikeja West, Onitsha, Egbin, Uguwaji, Jos, Gwagwalada & Alaoji T/S.

FOR MORE INFORMATION: NCC Telephone Lines -

- PAX 09/300, 309, 303 & 305.
- NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
- PLS - 622
- GM (NCC) - 08036744641.
- AGM (S/O) - 08056002757, CUG: 08129458475

