

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF MONDAY 08/10/2018

FOR: EVENTS OF SUNDAY 07/10/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,780	20:30	07/10/2018
GENERATION CAPABILITY	7693.5	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5187.3	-do-	-do-
PEAK GENERATION	4426.8	-do-	-do-
LOWEST GENERATION	2947.5	10:00	07/10/2018
8-HOURLY DURATION PEAK	3679.1	0100-0800	-do-
	3859.9	0900-1600	-do-
	4426.8	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	364	Jos T/S	02:09
LOWEST VOLTAGE FOR THE DAY	300	Gombe, Yola & Kumbotso T/S	13:00, 13:00 & 20:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.91	22:04
LOWEST FREQUENCY	49.11	02:01

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Sept, 2018		No. of days since last total collapse: 17												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 176												
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	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			2	0	3	1	0	0	1	0	9	
	Partial			0	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	0	4	
2016	Total	--	--	2	3	6	5	0	0	1	2	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	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	350	188
2 JEBBA	HYDRO	406	352
3 SHIRORO	HYDRO	426	318
4 EGBIN ST2 - 5	STEAM	504	331
5 SAPELE	STEAM	50	35
6 DELTA	GAS	490	298
7 AFAM IV-V	GAS	45	0
8 GEREGU GAS	GAS	123	90
9 OMOTOSHO GAS	GAS	138.6	135.9
10 OLORUNSOGO GAS	GAS	141.8	118.1
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	78.8	64.2
13 ALAOJI NIPP	GAS	80.5	0
14 OLORUNSOGO NIPP	GAS	99.2	59.7
15 OMOTOSHO NIPP	GAS	93.7	75.4
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	88.9	90.1
18 OKPAI	GAS	279	176
19 AFAM VI	GAS	227	101
20 IBOM POWER	GAS	0	61.2
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	55.5	56.8
24 TRANS AMADI	GAS	60.6	30.5
25 RIVERS IPP	(GAS)	145	80
26 AZURA - EDO IPP	(GAS)	250	75
27 EGBIN ST6	(GAS)	143	143
28 PARAS ENERGY	(GAS)	69.4	68.6
29 GBARAIN NIPP	GAS	81.8	0
TOTAL		4426.8	2947.5

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9600.00	400.00	9585.20	399.38
2 JEBBA	HYDRO	9418.00	392.42	9392.48	391.35
3 SHIRORO	HYDRO	8242.00	343.42	8013.81	333.91
4 EGBIN ST2 - 5	STEAM	9091.00	378.79	8583.90	357.66
5 SAPELE	STEAM	906.50	37.77	859.80	35.83
6 DELTA	GAS	9615.65	400.65	9502.10	395.92
7 AFAM IV-V	GAS	555.00	23.13	550.18	22.92
8 GEREGU GAS	GAS	2698.80	112.45	2679.14	111.63
9 OMOTOSHO GAS	GAS	2909.00	121.21	2887.20	120.30
10 OLORUNSOGO GAS	GAS	3032.31	126.35	3005.41	125.23
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	2051.52	85.48	2033.39	84.72
13 ALAOJI NIPP	GAS	940.31	39.18	939.88	39.16
14 OLORUNSOGO NIPP	GAS	1736.70	72.36	1702.90	70.95
15 OMOTOSHO NIPP	GAS	1522.70	63.45	1507.10	62.80
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2213.50	92.23	2191.13	91.30
18 OKPAI	GAS	5365.00	223.54	5242.30	218.43
19 AFAM VI	GAS	2959.06	123.29	2855.06	118.96
20 IBOM	GAS	1077.42	44.89	1069.00	44.54
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	3811.70	158.82	3791.60	157.98
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1301.50	54.23	1273.89	53.08
25 TRANS AMADI	GAS	1064.60	44.36	1036.70	43.20
26 RIVERS IPP	GAS	2687.80	111.99	2681.84	111.74
27 EGBIN ST6	STEAM	3340.00	139.17	3153.80	131.41
28 PARAS ENERGY	GAS	1651.30	68.80	1647.40	68.64
29 GBARAIN NIPP	GAS	658.40	27.43	647.50	26.98
TOTAL		88,449.77	3,685.41	86,832.71	3,618.03

1.7A GENERATION POSITION AT 06:00HRS MONDAY 08/10/2018

	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) AT 50.41Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	420	1G5, 6, 11 & 12 4	420	327	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	475	450	2G1- 5 5	450	421	2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G2 - 4 3	450	450	411G2 - 4 3	450	434	411G1 - Out due to technical problem.
	EGBIN STEAM	5	ST2, 4 & 5 3	660	491	ST2, 4 & 5 3	507	447	ST1 - Out due to undisclosed fault since 04/09/2018. ST3 - Out on high vibration since 19th June 2017. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	ST2 1	120	47	ST2 1	47	47	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.
	DELTA (GAS)	18	GT9 - 13, 15, 16 & 18 - 20 10	625	610	GT9 - 13, 16 & 19 7	300	296	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT7 - Out on fault. GT15, 18 & 20 - Out due to low load demand by the Discos. GT17 - Tripped on bearing vibration more than maximum.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13,14 & 16 - Out on blade failure. GT17 - Out due to low demand by the Discos. GT17 - Tripped on bearing pedestrier vibration >max turbino trip. GT18 - Out on maintenance. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 & 13 2	290	290	0 0	0	0	GT11 - Out due to gas constraint. GT12 - Tripped on natural gas valve position. GT13 - Out due to low load demand by the Discos.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 6 & 7 3	114	106.6	GT1, 3 - 5 & 8 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the discos.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4 & 6 3	114	106.1	GT1, 3, 5, 7 & 8 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the discos.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	0 0	0	0	GT21 - Out on maintenance. GT22 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 - 4 4	450	450	GT1 1	112.5	78.3	GT2 & 3 - Out due to low load demand by the Discos. GT4 - Out due to gas constraint.
	ALAOJI NIPP GAS	4	GT1 & 2 2	250	240	0 0	0	0	GT1 & 2 - Out due to low load demand by the Discos. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	0 0	0	0	GT1 - 3 - Out due to low load demand by the Discos. 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	0 0	0	0	GT1, 2 & 4 - Out due to low load demand by the Discos. GT3 - Out due to oil leakage on the unit.
	ODUKPANI NIPP	5	0 0	0	0	0 0	0	0	GT1 & 2 - Out on fault. GT3 & 5 - Out due to gas leakage. GT4 - Tripped on main transformer neutral O/C and HV protection.
	IHOVBOR NIPP	4	GT1, 2 & 4 3	337.5	337.5	0 0	0	0	GT1, 2 & 4 - Out due to low load demand by the Discos. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	115	112.5	0 0	0	0	GT2 - Out due to low load demand by Discos.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	370	370	GT11, 12 & ST18 3	370	267	ST18 - Generation reduced due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 1	153	125	GT12 & 13 - Out due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 1	150	114	GT12 & 13 - Out due to low load demand by the Discos. ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	0 0	0	0	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Out due to low load demand by the Discos.
	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 & 5 3	75	60	GT1, 2 & 5 3	56.1	56.1	GT3 - Tripped on over speed. GT4 - Awaiting major overhaul. GT6 Out on maintenance.
	TRANS-AMADI	4	GT 1, 2 & 4 3	75	60	GT1,2 & 4 3	55.6	55.6	GT3 - Out on fault.
	RIVERS	1	GT1 1	160	160	GT1 1	160	140	GT1 - Generation reduced due to low load demand by the Discos.
	SUB TOTAL	140	80	7830.5	7382	42	3459.2	3020.7	Frequency = 50.41Hz.

1.7B GENERATION POSITION AT 06:00HRS OF MONDAY 08/10/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	ST6	220	164	ST6	164	164	Available unit on bar.
		1			1			
PARAS ENERGY	8	GT2 - 9	67.8	67.8	GT2 - 9	67.8	67.8	Available units on bar.
		8			8			
SUB TOTAL	9	9	287.8	231.8	9	231.8	231.8	
GRAND TOTAL	149	89	8118.3	7613.8	51	3,691.00	3,252.50	Frequency = 50.41Hz

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - SUNDAY 07/10/2018.							
EGBIN ST6 120MW 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		21		FEEDER TRIPPED ON INST. OC AND INST.EF
	PTCEXPRESS	ON	0100HRS		21		FEEDER TRIPPED ON INST. OC AND INST.EF
	SANKYO	ON	0100HRS		24		NIL
	FEEDER 8	12	1200HRS		24		NIL
IKORODU	PULK IT	3	0900HRS		24		NIL
	INDUSTRIAL	8	2100HRS		24		NIL
	SPINTEX	4	0600HRS		24		NIL
	DANGOTE	ON	0100HRS		24		NIL
	LAND CRAFT	39	1600HRS		24		NIL
ALAUSA	TR4 15MVA	4.6	0100HRS		24		NIL
	TR5 -15MVA	3.7	0100HRS		24		NIL
	ALAUSA	10.1	1600HRS		21		TRIPPED ON E/F AWAITS PATROL
M/LAND	PTC (MARYLAND)	17	2100HRS		24		NIL
	TOTAL LOAD	101.4					

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF SUNDAY 07/10/2018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	69.4	11:00	67.4	02:00	24	1646	Nil.

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF SUNDAY 07/10/2018									
COMPANY NAME	VOLTAGE LEVEL	CONTRACTUAL 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		15.0	0.2	01:00	0.1	08:00	24	3.8	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0.0	7.8	20:00	2.9	08:00	24	143.7	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0.0							
XING 2		0.0							
KAM INTEGRATED		15.0	4.5	03:00	1.7	06:00	24	71	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2	03:00	0.6	10:00	24	30	SUPPLY NOT INTERRUPTED
LORDSMITH		0	01:00	09:00	0.1	01:00	18	1	T2 30MVA TRIPPED ON E/F 80C AND SIMULTANEOUSLY FDR TRIPPED ON O/C 3 PHASES & E/F

1.8 HYDROLOGICAL DATA: MONDAY 08/10/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.04	103.03	382.72
TAIL WATER ELEVATION (METERS)	105.25	75.9	273.0
GROSS OPERATING HEAD (METERS)	35.79	27.13	109.72
AVERAGE TURBINE DISCHARGE (M3/SEC)	1252.00	1638.00	347.00
AVERAGE SPILLAGE (M3/SEC)	480.00	1104.00	1086.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1732.00	2742.00	1433.00
COMPUTED INFLOW (M3/SEC)	2045.00	2465.00	1641.00
STORAGE DIFFERENTIAL	313.00	-277	208
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 SUNDAY 07/10/2018

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	488.0	13:00	544.74	238.4	17:00
EKO	0.0	0	0.00	0	0
IKEJA	558.7	21:00	671.4	160.9	23:00

2.0 GAS POSITION: MONDAY 08/10/2018

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	439	1100		671	429
DELTA (GAS)	452	915		300	615
OMOTOSHO GAS	139.7	336.8		152	184.8
OMOTOSHO NIPP	0	500		0	500
OLORUNSOGO (GAS)	116.9	336		114	222
OLORUNSOGO NIPP	111.6	750		0	750
SAPELE NIPP	73.9	500		112.5	387.5
SAPELE STEAM	35	720		47	673
AFAM IV-V	0	300		0	300
AFAM VI	107	650		150	500
GEREGU GAS	120	435		0	435
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	227	480		370	110
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	73.5	450		0	450
IBOM	62.2	198		0	198
ODUKPANI NIPP	0	625		0	625
TOTAL	1957.8	9234.80		1916.5	7318.3

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SUNDAY 07/10/18

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF MONDAY 08/10/2018 = 0MW. FREQUENCY 50.41Hz.

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 Monday 08/10/2018 as at 0600Hrs was = 4048.8MW.					
6	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Geregu Gas GT11	145	0	145	747.5
2	Afam VI ST10	200	0	200	
3	Geregu NIPP GT22 & 23	290	0	290	
4	Sapele NIPP GT4	112.5	0	112.5	
				0	
				0	
				0	
				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 1951.54MMSCF OF GAS (EQUIVALENT TO 7318.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
		0	0		0
		0	0		0
		0	0		0
4.3 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Ihovbor GT1, 2 & 4	337.5	0	337.5	3073.8
2	Azura Edo GT12 & 13	306	0	306	
3	Egbin ST2, 4 & 5	507	447	60	
4	Rivers IPP GT1	160	140	20	
5	Delta GT15, 18 & 20	325	0	325	
6	Alaoji NIPP GT1 & 2	240	0	240	
7	Omotosho NIPP GT1, 2 & 4	360	0	360	
8	Olorunsogo NIPP GT1 - 3	360	0	360	
9	Omotosho Gas GT1 - 8	304	106.6	197.4	
10	Olorunsogo Gas GT1 - 8	304	106.1	197.9	
12	Afam VI GT12 & 13	300	0	300	
13	Sapele NIPP GT2 & 3	225	0	225	
14	Geregu GT13	145	0	145	
15	Gbarain GT2	112.5	0	112.5	
16	Ibom GT3	115	0	115	
			0	0	
			0	0	
4.1 DUE TO WATER MANAGEMENT:					
Grand Total					4048.8

5.0 **OUTAGES:**

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

- 1 01:55 - 04:35Hrs, Shiroro 411G2 tripped on protective shut down. LHR = 143MW
- 2 01:55 - 08:57Hrs, Shiroro 411G3 tripped on protective shut down. LHR = 144MW.
- 3 01:55 - 05:06Hrs, Shiroro 411G4 tripped on protective shut down. LHR = 144MW.
- 4 02:02 - 12:05Hrs, Afam IV GT17 tripped on under frequency trip relay. LHR = 45MW.
- 5 23:32 through 24:00Hrs, Afam IV GT17 tripped on bearing vibration greater than maximum. LHR = 45MW

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

- 1 01:55 – 02:48Hrs, Shiroro/Gwagwalada 330kV line (cct R5G) CBs tripped at both ends on the following relay indications:
At Shiroro T/S: ABB relay – General trip, start Z < B, start Z < E, start DEF, trip Z < zone 1, lockout trip, backup protection trip, start I< line, start ie < line.
At Gwagwalada T/S: Siprotec relay – Distance protection trip (A, B & C), faulty Blue Phase, fault location = 162km. LHR = 78MW.
- 2 01:55 – 02:38Hrs, Shiroro/Katampe 330kV line (cct R4B) CBs tripped at both ends on the following relay indications:
At Shiroro T/S: ABB relay – Trip ie > line, trip ie > line.
At Katampe T/S: Without relay indication. LHR = 124MW.
- 3 01:55 – 02:16Hrs, Shiroro/ Mando 330kV line 2 (cct R2M) CB tripped at Mando T/S on Siprotec relay – zone 2, Phase C – N, DEF trip. No load loss as cct R1M was in service.
- 4 02:09 – 02:53Hrs, Jos/Gombe 330kV line (cct S1E) CB tripped at Jos T/S on O/V (364kV) LHR = 124MW.
- 5 12:18 – 12:43Hrs, Osogbo/Ikeja West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:
At Osogbo T/S: Siprotec relay – Relay trip, Blue Phase zone 1 trip, E/F, distance = 247.9km. Auxiliary relay – 85X 2, tripping 86T.
At Ikeja West T/S: Siprotec relay – General trip, Blue Phase fault, zone 1 trip, fault location = 2.74km. No load loss as ccts R1W, R2A & H2A were in service.
- 6 12:18 – 12:43Hrs, Egbin/Oke-Aro 330kV line 1 (cct N7K) CB tripped at Oke-Aro T/S on ABB relay – Trip L3, trip 21L, trip zone 1. No load loss as cct N8K was in service.
- 7 15:59 – 18:42Hrs, katampe T/S 150MVA 330/132/33kV transformer TR1 primary CB tripped on REF and P tripped relay. Load loss = 84MW
- 8 18:43 – 19:02Hrs, Benin/Omosho 330kV line (cct B5M) CBs tripped at both end on the following relay indications:
At Benin T/S:
ABB-Trip, trip-TRL3 PHS/STFWL2PE, ZM1-trip, EFC-CS, Auto reclosure in progress, DEF-Block, ZM2& ZM3-start, ZC1P-CSL3, TOC-STL3, HS-TRL3, fault loop = L3-N, distance = 89.8km.
Auxiliary relay: MVAJ K86C
Ohmega relay: Zone 1 trip, phase C, earth.
At Omotosho T/S:
PSL 601: RT1P (A, B & C)
Auxiliary relay: Tripping (A, B & C) stages 1 & 2.
PSL 602: TR1PL, ground distance zone 1 trip, phase C trip, zero, sequence zone 1 trip phase C grounded, distance = 23.83km. No load loss as ccts M5W, H1W & B6N were in service. (LHR = 73MW).

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

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

- 1 10:09 – 12:44Hrs, Sapele NIPP GT1 was shut down due to gas leakage on the unit. Load loss = 63.5MW.

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.

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

The under mentioned line was opened on frequency control.

- 1 02:01 - 02:19Hrs, Mando/Kano 330kV line (cct M6N). Load loss = 197MW. Frequency was 49.11Hz.

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts K4U, L7G, U1A & A1S.**

4 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- cct A1K.**

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:- cct J2H.**

5 (K) **330KV LINES THAT ARE ON SOAK:- ccts F1K, B3D & N4J**

- 6 **WEATHER REPORT:-** Rainfall reported at Shiroro, Osogbo, Katampe, Ayede, Ganmo, Ajah, Oke-aro, Maryland, Egbin, Ikeja-West, Akangba

7 **INTERNATIONAL LINES:-**

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

Maximum load - 260MW at 20:00Hrs.
Minimum load - 152MW at 09:00Hrs.

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

Maximum load - 106MW at 22:00Hrs.
Minimum load - 89MW at 09:00Hrs.

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

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	28
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	9	10
132kV	102	83	19

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.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 40MW at 20:00Hrs.

Minimum load - 27MW at 05:00Hrs.

8 MISCELLANEOUS:-

- 1 00:01 through 24:00Hrs, Sapele NIPP GT3 was shut down due to low load demand by Discos. Load loss = 68.8MW.
 - 2 00:34 - 20:10Hrs, Afam VI GT13 was shut down due to low load demand by Discos. Load loss = 108MW.
 - 3 00:45 – 02:18Hrs, Delta GT16 was shut down due to low load demand by Discos. Load loss = 98MW.
 - 4 01:09 - 14:20Hrs, Gbarain NIPP GT2 was shut down due to low load demand by Discos. Load loss = 69.2MW.
 - 5 01:14 – 06:37Hrs, Omotosho NIPP GT4 was shut down due to low load demand by Discos. Load loss = 84.3MW.
 - 6 01:20 – 11:50Hrs, Alaoji NIPP GT2 was shut down due to low load demand by Discos. Load loss = 81.7MW.
 - 7 02:38Hrs, Azura-Edo reduced generation to minimum due to low load demand by Discos.
 - 8 06:36 through 24:00Hrs, Delta GT15 was shut down due to low load demand by Discos. Load loss = 100MW.
 - 9 06:48 - 19:50Hrs, Delta GT16 was shut down due to low load demand by Discos. Load loss = 57MW.
 - 10 07:14Hrs, Olorunsogo Gas reduced generation by 60MW due to low load demand by Discos.
 - 11 09:18 - 14:26Hrs, Azura-Edo GT13 was shut down due to low load demand by Discos. Load loss = 75MW.
 - 12 15:54Hrs, Omotosho P/S GT7 was tied to swap with GT8.
 - 13 16:20 through 24:00Hrs, Omotosho GT8 was shut down. No load loss as 20.1MW was transferred.
 - 14 19:22Hrs, Delta P/S GT19 was tied. The unit was out due to low load demand by Discos.
 - 15 21:42 through 24:00Hrs, Delta GT18 was shut down due to low load demand by Discos. Load loss = 98MW
 - 16 22:10 through 24:00Hrs, Afam VI GT13 was shut down due to low load demand by Discos. Load loss = 110MW
 - 17 22:11 through 24:00Hrs, Delta P/S GT20 was shut down due to low load demand by Discos. Load loss = 90MW
 - 18 22:14 through 24:00Hrs, Omotosho gas GT1 was shut down due to low load demand by Discos. Load loss = 35.6MW
 - 19 22:15 through 24:00Hrs, Olorunsogo NIPP GT1 was shut down due to low load demand by Discos. Load loss = 75.3MW
 - 20 22:16 through 24:00Hrs, Olorunsogo gas GT7 was shut down due to low load demand by Discos. Load loss = 37.3MW
 - 21 22:17 through 24:00Hrs, Alaoji NIPP GT2 was shut down due to low load demand by Discos. Load loss = 83.8MW
 - 22 22:18 through 24:00Hrs, Gbarain GT2 was shut down due to low load demand by Discos. Load loss = 68.9MW
- **** 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(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.

12(E) UNAVAILABLE SKYWIRES

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.

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

SHIRORO REGION

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

- 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 Shiroro T/S 330kV Jebba line 2 - 28 spans

ABUJA REGION

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

12 (F) UNAVAILABLE SYNCHROSCOPES :

- 1 Ikeja West, Onitsha, Egbin, Uguwaji, 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

