

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SUNDAY 06/01/2019
FOR: EVENTS OF SATURDAY 05/01/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,020	21:45	05/01/2019
GENERATION CAPABILITY	5636.3	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5200.3	-do-	-do-
PEAK GENERATION	4810.0	-do-	-do-
LOWEST GENERATION	3611.4	04:00	05/01/2019
8-HOURLY DURATION PEAK	3953.2	0100-0800	-do-
	3979.7	0900-1600	-do-
	4810	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	341	Jos & Birni-Kebbi T/S	04:00 & 11:00
LOWEST VOLTAGE FOR THE DAY	292	Sakete T/S	20:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.38	03:04
LOWEST FREQUENCY	49.750	20:14

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 3rd Jan., 2019		No. of days since last total collapse: 03												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 269												
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	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		1		11
	Partial	0	0	0	1	0				0				1
2019	Total	1												1
	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	400	349
2 JEBBA	HYDRO	450	255
3 SHIRORO	HYDRO	291	115
4 EGBIN ST2 - 5	STEAM	114	115
5 SAPELE	STEAM	0	0
6 DELTA	GAS	475	378
7 AFAM IV-V	GAS	47	40
8 GEREGU GAS	GAS	393	345
9 OMOTOSHO GAS	GAS	135.7	101
10 OLORUNSOGO GAS	GAS	192.3	166.8
11 GEREGU NIPP	GAS	263	123
12 SAPELE NIPP	GAS	86.5	87.4
13 ALAOJI NIPP	GAS	80.6	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	105.5	99.8
16 ODUKPANI NIPP	GAS	80.7	182.4
17 IHOVBOR NIPP	GAS	106.6	92.4
18 OKPAI	GAS	285	270
19 AFAM VI	GAS	250	124
20 IBOM POWER	GAS	107.1	92.3
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	58.6	61.1
24 TRANS AMADI	GAS	64	59.2
25 RIVERS IPP	(GAS)	110	0
26 AZURA - EDO IPP	(GAS)	407	325
27 EGBIN ST6	(GAS)	147	163
28 PARAS ENERGY	(GAS)	67.2	67
29 GBARAIN NIPP	GAS	93.2	0
TOTAL		4810	3611.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9455.00	393.96	9440.30	393.35
2 JEBBA	HYDRO	8672.00	361.33	8655.72	360.66
3 SHIRORO	HYDRO	4182.00	174.25	4154.60	173.11
4 EGBIN ST2 - 5	STEAM	6319.00	263.29	5901.30	245.89
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	8909.02	371.21	8788.50	366.19
7 AFAM IV-V	GAS	442.01	18.42	438.74	18.28
8 GEREGU GAS	GAS	9122.40	380.10	9091.34	378.81
9 OMOTOSHO GAS	GAS	2625.00	109.38	2602.40	108.43
10 OLORUNSOGO GAS	GAS	4037.69	168.24	4009.20	167.05
11 GEREGU NIPP	GAS	3570.25	148.76	3553.56	148.07
12 SAPELE NIPP	GAS	2117.50	88.23	2099.70	87.49
13 ALAOJI NIPP	GAS	983.31	40.97	975.01	40.63
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2505.70	104.40	2487.60	103.65
16 ODUKPANI NIPP	GAS	4157.24	173.22	4132.64	172.19
17 IHOVBOR NIPP	GAS	2340.00	97.50	2317.85	96.58
18 OKPAI	GAS	6889.00	287.04	6760.60	281.69
19 AFAM VI	GAS	2332.92	97.21	2277.22	94.88
20 IBOM	GAS	2238.05	93.25	2229.00	92.88
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	9343.45	389.31	9310.05	387.92
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1474.20	61.43	1436.47	59.85
25 TRANS AMADI	GAS	1486.60	61.94	1454.50	60.60
26 RIVERS IPP	GAS	1222.50	50.94	1218.40	50.77
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1592.60	66.36	1588.10	66.17
29 GBARAIN NIPP	GAS	561.20	23.38	552.20	23.01
TOTAL		96,578.64	4,024.11	95,475.00	3,978.13

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 06/01/2019

	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 50.14Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	407	1G5, 6, 11 & 12 4	407	407	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	461	2G1, 4 & 5 3	279	279	2G2 & 3 - Out due to low load demand by the Discos. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1 & 4 2	300	120	411G1 & 4 - Generation reduced due to low load demand by the Discos. 411G2 - Shut down on water management. 411G3 - Out on annual maintenance.
	EGBIN STEAM	6	ST4 & 6 2	440	260	ST4 & 6 2	260	260	ST1 - Out due to the unit transformer problem. ST2 - Out due to middle burner level problem. ST3 - Out on high vibration since 19th June 2017. ST4 - Generation reduced due to turbine valve problem. ST5 - Tripped due to loss of lower burner and tube leakage. ST6 - Generation reduced due to a burner problem. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 & 3 - Tripped on low water drum level. ST2 - Tripped on high vibration. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT6, 7, 9 - 13, 15, 16, 19 & 20 11	565	560	GT6, 7, 9 - 13, 15, 16 & 19 10	425	380	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT8 & 14 - Out on major overhaul. GT20 - Out due to low load demand by the Discos. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. GT19 - Generation reduced due to low load demand by the Discos.
	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 oil leakage on the bearing compartment. GT18 - Tripped on air intake pressure less than minimum. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	414	Available units on bar.
	OMOTOSHO GAS	8	GT1, 4, 6, 7 & 8 5	210	190	GT1, 6, 7 & 8 4	121.9	121.9	GT2, 3 & 5 - Out due to gas constraint. GT4 - Out due to low load demand by the Discos.
	OLORUNSOGO GAS	8	GT1, 3, 4, 5, 7 & 8 6	252	199.1	GT1, 3, 4, 5, 7 & 8 6	199.1	199.1	GT2 - Out due to gas constraint. GT6 - Out due to low load demand by the Discos.
NIPP	GEREGU NIPP	3	GT21 & 23 2	290	290	GT21 & 23 2	290	279	GT22 - Out on maintenance.
	SAPELE NIPP	4	GT2 1	112.5	55.6	GT2 1	55.6	55.6	GT1 & 3 - Out due to low gas pressure. GT2 - Generation reduced due to high air inlet differential pressure. GT4 - Out due to high air filter differential pressure.
	ALAOJI NIPP GAS	4	0 0	0	0	0 0	0	0	GT1 - Out due to high air inlet differential pressure. 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 - 3 - Shut down due to low gas pressure. 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	112.2	GT1, 3 & 4 - Out due to gas constraint.
	ODUKPANI NIPP	5	GT4 1	112.5	112.5	GT4 1	112.5	111.5	GT1 - Out on fault. GT2, 3 & 5 - Tripped on low gas pressure.
	IHOVBOR NIPP	4	GT4 1	112.5	112.5	GT4 1	112.5	111.9	GT1 - Out due to gas station maintenance. GT4 - On manual adjustment to frequency. GT2 - Tripped on main transformer oil temperature 2nd phase trip alarm. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	105.2	Available units on bar.
	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	370	GT11, 12 & ST18 3	370	314	ST18 - Generation limited due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	295	GT11 & 12 - Generation reduced due to low load demand by the Discos.
IPP	AFAM VI GAS/STEAM	4	GT12, 13 & ST10 3	490	490	GT13 3	150	140	GT11 - Out on type C inspection. GT12 & ST10 - Out due to low load demand by the Discos.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	100.1	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - On manual adjustment to frequency.
	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, 3 & 5 3	75	60.6	GT1, 3 & 5 3	60.6	60.6	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	64.5	GT1, 2 & 4 3	64.5	64.5	GT3 - Out on fault.
	RIVERS	1	GT 1	160	160	GT 1	160	80	GT1 - Generation reduced due to low gas pressure.
	SUB TOTAL	141	63	5958	5486.3	56	4611.2	4010.6	Frequency = 50.14Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 06/01/2019 FOR UNITS ON BILATERAL AGREEMENT

PARAS ENERGY	8	GT2 - 9	70	67.2	GT2 - 9	67.2	67.2	Available units on bar.
		8			8			
SUB TOTAL	8	8	70	67.2	8	67.2	67.2	
GRAND TOTAL	149	71	6028	5553.5	64	4,678.40	4,077.80	Frequency = 50.14Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 05/01/2019							
		EGBIN ST6 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		
U-STEEL	ON	0100HRS			24		NIL		
PTCEXPRESS	ON	0100HRS			24		NIL		
SANKYO	2	0700HRS			24		NIL		
FEEDER 8	10	1500HRS			24		NIL		
PULK IT	3	1900HRS			24		NIL		
INDUSTRIAL	2	1100HRS			24		NIL		
SPINTEX	7	2300HRS			24		NIL		
DANGOTE	3	1100HRS			24		NIL		
LAND CRAFT	45	0700HRS			24		NIL		
TR4 15MVA	6	1000HRS			24		NIL		
TR5 -15MVA	4.1	1000HRS			24		NIL		
ALAUUSA	12.9	1300HRS			24		NIL		
PTC (MARYLAND)	19	1100HRS			24		NIL		
TOTAL LOAD									

BILATERAL AGREEMENT LOAD DISPATCH									
60MW PARAS ENERGY GENERATION TO CEB OF SATURDAY 05/01/2019									
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK		
Ikeja West/Sakete 330kV line	68.6	01:00	64	18:00	24	1592.6	NIL		
BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: SATURDAY 05/01/2019									
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	ON
KAM STEEL		25.0	0.7	10:00	0.2	01:00	24	8.7	SUPPLY NOT INTERRUPTED
ASHAKA CEMENT		0	6.5	10:00	3.9	11:00	24	133.9	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	22.2	21:00	1.8	11:00	17	280.1	TRIPPED ON E/F
XING 2		0					24		
KAM INTEGRATED		15	4	09:00	1.2	14:00	24	48.4	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS	3	2	05:00	0.1	14:00	24	30.9	SUPPLY NOT INTERRUPTED	
LORDSMITH	3	0.6	01:00	0.3	14:00	24	11.4	SUPPLY NOT INTERRUPTED	

1.8 HYDROLOGICAL DATA: SUNDAY 06/01/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.37	102.37	376.96
TAIL WATER ELEVATION (METERS)	104.5	74.7	270.5
GROSS OPERATING HEAD (METERS)	36.87	27.67	106.46
AVERAGE TURBINE DISCHARGE (M3/SEC)	1177.00	1422.00	195.00
AVERAGE SPILLAGE (M3/SEC)	200.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1377.00	1422.00	195.00
COMPUTED INFLOW (M3/SEC)	1811.00	1353.00	47.00
STORAGE DIFFERENTIAL	434.00	-69	-148
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 SATURDAY 05/01/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	548.3	21:00	573.83	350.6	09:00
EKO					
IKEJA	584.3	20:00	662.12	449.1	07:00

2.0 GAS POSITION: SUNDAY 06/01/2019

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	282	1100		260	840
DELTA (GAS)	416	915		425	490
OMOTOSHO GAS	134	336.8		121.9	214.9
OMOTOSHO NIPP	114.7	500		120	380
OLORUNSOGO (GAS)	172.6	336		199	137
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	0	500		55.6	444.4
SAPELE STEAM	0	720		0	720
AFAM IV-V	50	300		0	300
AFAM VI	134	650		150	500
GEREGU GAS	270	435		435	0
GEREGU NIPP	181	435		145	290
OKPAI (GAS/STEAM)	216	480		370	110
ALAOJI NIPP	0	504		0	504
IHOV/BOR NIPP	100.1	337.5		112.5	225
IBOM	97.8	198		115	83
ODUKPANI NIPP		625		112.5	512.5
TOTAL	2168.2	9122.30		2621.5	6500.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 05/01/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 06/01/2019 = 0MW FREQUENCY 50.14Hz.

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
		GT1		0	
5	Omotosho NIPP	GT2	40	0	0
		GT3		0	
				0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Sunday 06/01/2019 as at 0600Hrs was = 1284MW.

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					
1	Azura-Edo GT11 & 12	306	150	156	1134
2	Jebba 2G2 & 3	180	0	180	
3	Delta GT20	100	0	100	
4	Olorunsogo GT8	38	0	38	
5	Omotosho GT4	38	0	50	
6	Shiroro 411G1 & 4	300	120	180	
7	Afam VI GT12 & ST10	350	0	350	
8	Rivers GT1	160	80	80	
				0	
				0	
				0	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G2	150	0	150	150
Grand Total					1284

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):

- 1 05:13 - 19:09Hrs, Afam IV GT18 tripped on air intake pressure less than minimum. LHR = 40MW
- 2 06:12 - 14:54Hrs, Afam VI GT13 tripped on low gas pressure. LHR = 135MW
- 3 08:20 - 10:21Hrs, Egbin ST4 tripped on boiler fed pump trouble. LHR = 115MW
- 4 23:21 through 24:00Hrs, Alaoji NIPP GT2 tripped on high exhaust temperature spread trip. LHR = 80MW

5 (B) FORCED OUTAGES (TRANSMISSION):

- 1 00:56 – 01:06Hrs, Akangba/Ojo 132kV line 1 CB tripped at Akangba T/S on O/C stage 2, 3 phases. LHR = 30MW

5 (C) PLANNED OUTAGES:- NIL

5 (D) URGENT OUTAGES:-

- 1 00:22 - 11:34Hrs, Alaoji NIPP GT2 was shut down due to air inlet differential pressure. Load loss = 80MW
- 2 15:08 through 24:00Hrs, Sapele NIPP GT2 was shut down due to 125V D.C battery ground alarm. Load loss = 92.7MW
- 3 15:40 - 20:38Hrs, Geregu NIPP GT23 was shut down due to air filter problem. Load loss = 130MW
- 4 11:18 – 14:11Hrs, Nkalagu T/S 30MVA 132/33kV transformer T2A was taken out to seal oil leakage on the diverter switch compartment. Load loss = 1.2MW
- 5 12:19 – 13:19Hrs, Shiroro/Minna 132kV line 1 was taken out to treat hot spot on the Yellow phase CVT, no load interruption as line 2 was in service.
- 6 22:43 through 24:00Hrs, Afam VI GT12 was shut down due to lack of gas supply. Load loss = 110MW
- 7

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 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

5 (E) EMERGENCY OUTAGES:-

The under mentioned line was opened on frequency control.

- 1 20:14 - 20:34Hrs, Osogbo/Akure 132kV line. Load loss = 60MW. Frequency was 49.75Hz.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:-

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 21:00Hrs.

Minimum load - 218MW at 08:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 87.0MW at 20:00Hrs.

Minimum load - 48.0MW at 02:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 36MW at 20:00Hrs.

Minimum load - 17.4MW at 04:00Hrs.

8 MISCELLANEOUS:-

- 1 00:14 - 19:20Hrs, Afam VI GT12 was shut down due to low load demand by Discos. Load loss = 110MW
- 2 01:21Hrs, Delta GT19 was tied. The unit was out due to low load demand by Discos.
- 3 01:38 - 19:47Hrs, Delta GT20 was shut down due to low load demand by Discos. Load loss = 84MW
- 4 01:59 - 18:46Hrs, Jebba 2G3 was shut down due to low load demand by the Discos. Load loss = 86MW
- 5 09:20Hrs, Jos T/S 150MVA 330/132kV transformer T2A was restored. The transformer was out on fault.
- 6 09:37Hrs, Katampe T/S 75MX 330kV reactor was taken out of service on voltage control. V/P = 317/322kV
- 7 10:24Hrs, cct W4L was restored. The line was out on fault.
- 8 10:31Hrs, Alaoji NIPP GT2 was tied. The unit was out on fault.
- 9 11:08Hrs, Rivers GT1 was tied. The unit was out due to gas constraint.
- 10 12:18Hrs, Azura-Edo increased generation to maximum to improve system frequency

PLC/PAX	38	34
OPTIC FIBRE	13	12
PLS	14	4

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	7	12
132kV	102	80	22

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 reactor installed.

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
 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.

- 11 12:40Hrs, Azura-Edo increased generation to maximum on GT11 & 12 to improve system frequency
 12 14:57Hrs, Sapele NIPP GT3 was tied. The unit was out on air inlet differential pressure trouble.
 13 15:20Hrs, Geregu NIPP GT21 was tied. The unit was out on maintenance.
 14 16:01Hrs, Geregu gas increased generation by 50MW frequency was 50.28Hz
 15 16:13Hrs, Moperson T/S 45MVA 132/33kV transformer T1 was restored. The transformer was out at 22:47Hrs of 03/01/2019.
 16 16:53Hrs, Ayede 50MVA 132/33kV transformer T1 was restored. The transformer was out due to fire outbreak at 23:38Hrs. of 29/12/2018
 17 17:50Hrs, Gbarain NIPP GT2 was tied. The unit was out due to gas constraint.
 18 19:43Hrs, Olorunsogo GT8 was tied. The unit was out due to low load demand by the Discos.
 19 20:10Hrs, Odukpani NIPP GTS 3 & 4 deloaded due to low gas pressure. Load loss = 92.5 MW & 92.5MW respectively.
 20 21:31Hrs, Odukpani GT4 was tied. The unit was out due to low gas pressure.

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

**** **LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.**

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.
 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, Ugwuaji, 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

