

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF WEDNESDAY 06/06/2018

FOR: EVENTS OF TUESDAY 05/06/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	23:00	05/06/2018
GENERATION CAPABILITY	7451.4	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5159.9	-do-	-do-
PEAK GENERATION	4301.5	-do-	-do-
LOWEST GENERATION	3736.6	16:00	05/06/2018
8-HOURLY DURATION PEAK	4248.4	0100-0800	-do-
	4186.9	0900-1600	-do-
	4301.5	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	355	Birnin-Kebbi T/S	24:00
LOWEST VOLTAGE FOR THE DAY	280	Kumbotso T/S	12:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.601	02:04
LOWEST FREQUENCY	48.96	15:10

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 116												
Date of last partial collapse: 12 th April., 2018		No. of days since last partial collapse: 52												
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								6
	Partial	0	0	0	1	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	112	159
2 JEBBA	HYDRO	227	160
3 SHIRORO	HYDRO	493	497
4 EGBIN ST2 - 5	STEAM	427	464
5 SAPELE	STEAM	0	0
6 DELTA	GAS	557	455
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	294	327
9 OMOTOSHO GAS	GAS	137.7	130.6
10 OLORUNSOGO GAS	GAS	164.9	152.6
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	171.8	206.8
13 ALAOJI NIPP	GAS	112.3	108.2
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	198.7	105.1
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	165.4	181.1
18 OKPAI	GAS	224	246
19 AFAM VI	GAS	527	303
20 IBOM POWER	GAS	105.8	71
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	64.9	0
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	148	0
27 EGBIN ST6	(GAS)	100	100
28 PARAS ENERGY	(GAS)	71	70.2
29 GBARAIN NIPP	GAS	0	0
TOTAL		4301.5	3736.6

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	3344.00	139.33	3329.60	138.73
2 JEBBA	HYDRO	4293.00	178.88	4275.32	178.14
3 SHIRORO	HYDRO	12010.00	500.42	11979.44	499.14
4 EGBIN ST2 - 5	STEAM	11917.00	496.54	11363.30	473.47
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	10838.89	451.62	10682.20	445.09
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	8317.10	346.55	8284.85	345.20
9 OMOTOSHO GAS	GAS	3195.00	133.13	3171.00	132.13
10 OLORUNSOGO GAS	GAS	3868.34	161.18	3836.82	159.87
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	4417.95	184.08	4398.22	183.26
13 ALAOJI NIPP	GAS	2344.68	97.70	2321.78	96.74
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	4060.10	169.17	4015.30	167.30
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	4290.00	178.75	4264.84	177.70
18 OKPAI	GAS	5513.00	229.71	5442.90	226.79
19 AFAM VI	GAS	8056.86	335.70	7924.50	330.19
20 IBOM	GAS	1934.89	80.62	1926.00	80.25
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	4001.10	166.71	3985.83	166.08
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1202.50	50.10	1163.08	48.46
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	2465.00	102.71	2338.30	97.43
28 PARAS ENERGY	GAS	1668.80	69.53	1660.00	69.17
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
TOTAL		97,738.21	4,072.43	96,363.28	4,015.14

1.7A GENERATION POSITION AT 06:00HRS OF WEDNESDAY 06/06/2018

	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	270	1G5 & 6 2	190	148	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. 1G11 - Out on maintenance. 1G12 - Out on water management.
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1 & 5 2	190	167	2G2-4 - Out on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	560	560	411G1, 2 & 4 3	420	372	411G3 - Out on frequency management. Generation reduced due to low gross operating head.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	403	ST1, 2, 4 & 5 4	403	403	ST3 - Out on high vibration since 19th June 2017.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Out on low drum level. ST2 - Out on instrument air compressor low. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9-13, 15, 16 & 18 - 20 11	635	635	GT7, 9 -13, 15, 19 & 20 9	435	412	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT17 - Out on excitation trouble. GT16 & 18 - Out on frequency management.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 - Shut down due to oil leakage on the unit bearing compartment. GT18 - Out on lube oil pressure problem. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 & 13 2	290	261	GT12 - Out on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 6 & 8 3	114	105.2	GT2 - 5 - Out due to gas constraint. GT7 - Out on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 6 & 8 4	152	111.7	GT1, 5 & 7 - Out due to gas constraint. GT2, 4, 6 & 8 - Generation reduced on frequency management. GT3 - Out on frequency management.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	0 0	0	0	GT21 - 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	225	225	GT3 1	112.5	83.8	GT1 - Out on frequency management. GT2 - Out due to high air inlet differential pressure. GT4 - Out on general fire alarm.
	ALAOJI NIPP GAS	4	GT1 & 4 2	250	240	GT4 1	120	86.9	GT1 - Out 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	GT1 1	120	101.9	GT2 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit. GT4 - Out on frequency management.
	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 - Out on high air inlet differential pressure. GT4 & 5- Shut down due to work on gas pipe line equipment.
	IHOVBOR NIPP	4	GT1 - 3 3	337.5	315	GT3 1	110	92.8	GT1 - Out on frequency management. GT2 - Out due to gas constraint. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out on loss of back feed.
IPP	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	226	ST18 - Out due to water shortage.
	AZURA - EDO	3	GT11 & 13 2	306	306	GT11 1	153	128	GT12 - Tripped on loss of auxiliary. GT13 - Out due to line constraint.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 - 13 & ST10 4	640	516	Available units on bar.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	77.4	GT1 & 2 - Out on fault. GT3 - Generation reduced due to line constraint.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT2, 5 & 6 3	75	60	GT2 & 5 2	45	45	GT1 - Out on fault. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 - Out due to lube oil low pressure.
	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	0 0	0	0	GT1 - Out due to low gas pressure.
SUB TOTAL	131	79	7910.5	7172	43	3909.5	3337.7	Frequency = 50.33Hz.	

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

FEEDER	MAX. LOAD (MW)	TIME (HRS)	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY			
U-STEEL	1	0700HRS	24
PTCEXPRESS	10	1800HRS	15
SANKYO	ON	0100HRS	24
FEEDER 8	17	1100HRS	24
IKORODU			
PULK IT	4	0900HRS	24
INDUSTRIAL	19	090HRS	24
SPINTEX	9	1700HRS	24
DANGOTE	1	0100HRS	24
LAND CRAFT	16	0100HRS	24
ALAUUSA			
TR4 15MVA	8.3	16;00	24
TR5 -15MVA	6	09;00	24
ALAUUSA	16.2	15;00	24
MLAND			
PTC (MARYLAND)	15	1800HRS	22
LORDSMITH (PAPALANTO)	0.4	0100HRS	24
TOTAL LOAD	122.9		

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 05/06/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	REMARK
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY			
U-STEEL	1	0700HRS	24
PTCEXPRESS	10	1800HRS	15
SANKYO	ON	0100HRS	24
FEEDER 8	17	1100HRS	24
IKORODU			
PULK IT	4	0900HRS	24
INDUSTRIAL	19	090HRS	24
SPINTEX	9	1700HRS	24
DANGOTE	1	0100HRS	24
LAND CRAFT	16	0100HRS	24
ALAUUSA			
TR4 15MVA	8.3	16;00	24
TR5 -15MVA	6	09;00	24
ALAUUSA	16.2	15;00	24
MLAND			
PTC (MARYLAND)	15	1800HRS	22
LORDSMITH (PAPALANTO)	0.4	0100HRS	24
TOTAL LOAD	122.9		

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	71.8	22:00	24	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF TUESDAY - 05/06/2018

COMPANY NAME	VOLTAGE LEVEL	EXPECTED CONTRACTUAL LOAD (MW)	MAX	TIME	HOUR IN SERVICE	REMARK
INNER GALAXY	132kV line	25	10	10:00	24	NIL
KAM STEEL		Not commissioned				
ASAKA CEMENT	33kV feeder	0	19:12	17:00	24	NIL
KAM INTEGRATED		15	1.5	11:00	24	NIL
OLAM FLOUR MILLS		3	1.9	15:00	24	NIL
LORDSMITH		3	0.5	16:00	24	NIL

1.8 HYDROLOGICAL DATA: WEDNESDAY 06/06/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	131.19	99.85	359.98
TAIL WATER ELEVATION (METERS)	101.88	73.0	272
GROSS OPERATING HEAD (METERS)	29.31	26.85	88.48
AVERAGE TURBINE DISCHARGE (M3/SEC)	498.00	779.00	649.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	498	779	649
COMPUTED INFLOW (M3/SEC)	89.00	623.00	92.00
STORAGE DIFFERENTIAL	-409.00	-156	-557
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 TUESDAY 05/06/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	463.4	14:00	446.74	343.3	07:00
EKO	498.4	15:00	527.31	328.5	22:00
IKEJA	538.2	23:00	426.6	280.6	16:00

2.0 GAS POSITION: WEDNESDAY 06/06/2018

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	403	1100		403	697
DELTA (GAS)	412	915		435	480
OMOTOSHO GAS	105.2	336.8		114	222.8
OMOTOSHO NIPP	101.9	500		120	380
OLORUNSOGO (GAS)	111.7	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	83.8	500		112.5	387.5
SAPELE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	516	650		640	10
GEREGU GAS	261	435		290	145
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	226	480		300	180
ALAOJI NIPP	86.9	504		120	384
IHOVBOR NIPP	92.8	450		110	340
IBOM	77.4	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2477.7	9234.80		2911.5	6323.3

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : TUESDAY 05/06/2018

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum			
AVERAG			

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF TUESDAY 05/06/2018 = 0MW. FREQUENCY 50.33Hz.

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	
		GT4		0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Tuesday 05/06/2018 as at 0600Hrs was = 3545.4MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB -TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Omotosho NIPP GT2	120	0	120	1851
2	Alaoji NIPP GT1	120	0	120	
3	Geregu NIPP GT21 - 23	435	0	435	
4	Olorunsogo NIPP GT1 - 3	360	0	360	
5	Rivers GT1	160	0	160	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Omotosho Gas GT2 - 5	152	0	152	
8	Olorunsogo Gas GT1, 5 & 7	114	0	114	
9	Ihovbor NIPP GT2	110	0	110	
10	Sapele Steam ST02	50	0	50	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1686.21MMSCF OF GAS (EQUIVALENT TO 6323.3MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Trans-Amadi GT1 & 2	40	0	40	230.6
2	Ibom GT3	115	77.4	37.6	
3	Azura-Edo GT13	153	0	153	
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Afam VI ST10	190	0	190	1098.8
2	Delta GT16 & 18	180	0	180	
3	Omotosho NIPP GT4	120	0	120	
4	Ihovbor NIPP GT1	95	0	95	
5	Shiroro 411G3	140	0	140	
6	Omotosho Gas GT7	38	0	38	
7	Olorunsogo Gas GT2, 3, 4, 6 & 8	190	111.7	78.3	
8	Sapele NIPP GT1	112.5	0	112.5	
9	Geregu Gas GT12	145	0	145	
4.4 DUE TO WATER MANAGEMENT					
1	Kainji 1G12	80	0	80	365
2	Jebba 2G2 - 4	285	0	285	
Grand Total					3545.4

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):-

- 00:31 through 24:00Hrs, Sapele Steam ST02 tripped due to low gas pressure. LHR = 40MW.
- 06:02Hrs, Omoku GTs 1, 2, 5 & 6 tripped on reverse power due to the tripping of Alaoji/Afam 132kV line 2. Total LHR = 80MW. 09:36Hrs - GT2 was tied, 09:38Hrs, GT5 was tied, 09:39Hrs, GT6 was tied, 09:40Hrs, GT1 was tied.
- 13:55- 14:39Hrs, Omoku GT6 tripped on high exhaust temperature. LHR = 22.1MW
- 15:43Hrs, Omoku P/S GTs 5 & 6 tripped due to system surge. Total LHR = 43MW. 15:55Hrs, GT5 was tied
- 17:31 - 18:45Hrs, Afam VI ST10 tripped on stress. LHR = 36MW
- 18:06 – 20:59Hrs, Geregu Gas GT13 tripped on flame monitoring fault. LHR = 119MW.

5(B) FORCED OUTAGES (TRANSMISSION):

- 06:02 - 06:28Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on micom relay: trip alarm I<1/2 ti <2/2. LHR = 44MW.
- 10:30 - 13:20Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary & secondary CBs tripped
On primary CB: SBEF trip.
On secondary CB: instantaneous trip (Red Phase conductor pulled out from the pot insulator at the secondary side). LHR = 45MW.
- 12:10 - 12:15Hrs, Birnin-Kebbi/Niamey 132kV line CB tripped at Birnin-Kebbi T/S on distance protection relay zone 1. LHR = 101MW
- 12:15 - 12:25Hrs, Kumbotso T/S 150MVA 330/132/33kV transformer T2B secondary CB tripped on O/C Blue phase. LHR = 105MW
- 15:05Hrs, Azura-Edo IPP GTs 11 & 12 tripped due to loss of auxiliary supply. Total LHR = 280MW. At 22:48Hrs, GT11 was tied.
- 19:29 - 19:53Hrs, Kumbotso T/S 150MVA 330/132/33kV transformer T3A secondary CB tripped on O/C Red Phase relay. LHR = 45MW.
- 19:36 - 20:23Hrs, Potiskum T/S 30MVA 132/33kV transformer T1 primary CB tripped on back up protection relay while the secondary CB tripped on SBEF O/C & E/F. LHR = 20MW
- 19:40 through 24:00Hrs, Potiskum T/S 30MVA 132/33kV transformer T2 primary CB tripped on differential relay while secondary CB tripped on SBEF. LHR = 0.5MW.
- 23:49 - 23:53Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) CB tripped at Ikot-Ekpene T/S on SEL Relay - Phase A-C & G zone 1 BC = 103.63km. LHR = 200MW.

5 (C) PLANNED OUTAGES:-

- 10:36 - 13:46Hrs, Jebba/Shiroro 330kV line 1 (cct J3R) was taken out to top up low oil level on the Blue phase C. T. to normal at Jebba T/S. No load loss as cct J7R was in service.
- 13:24 – 16:46Hrs, Benin/Delta 132kV line was taken out to enable maintenance crew carry out annual preventive maintenance on the line CB at Benin T/S. Load loss = 21.6MW.
- 13:20 – 17:50Hrs, Lekki/Alagbon 330kV line (cct E1B) was taken out at Lekki T/S to enable maintenance crew and Pivot/Siemens contractors test and trouble shoot suspected open cct on diameter D02. No load loss as the line was on soak.

5(D) URGENT OUTAGES:

- 13:51 - 14:17Hrs, Ajaokuta T/S 30MVA 132/33kV transformer T1 primary CB was taken out to build up low SF6 gas pressure to normal. Load loss = 0.2MW
- 10:57 – 13:43Hrs, Egbin/Oke-Aro 330kV line 2 (cct N8K) tie CB was taken out to enable maintenance crew top up low SF6 gas level to normal. No load loss as the main CB was in service.

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.

5 (E) EMERGENCY OUTAGES:-

The under mentioned lines were opened on frequency control.

- 15:04 – 15:09Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. Load loss = 50MW. Frequency was 49.12Hz.
- 15:04 - 15:21Hrs, Akangba/Itire 132kV line 1. Load loss = 20MW. Frequency was 49.61Hz.
- 15:04 - 15:35Hrs, Akangba/Ojo 132kV line 2. Load loss = 27MW. Frequency was 49.61Hz
- 15:05 - 15:18Hrs, Kumbotso/Dakata 132kV line. Load loss = 50MW. Frequency was 49.6Hz.
- 15:10 - 15:18Hrs, Osogbo/Akure/Ado-Ekiti 132kV line. Load loss = 48MW. Frequency was 49.95Hz.
- 15:12 - 16:45Hrs, Birnin-Kebbi/Sokoto 132kV line. Load loss = 41MW. Frequency was 49.6Hz.
- 15:14 – 16:20Hrs, Alagbon/Akoka 132kV line. Load loss = 54MW. Frequency was 49.56Hz.
- 15:15 - 15:20Hrs, Kumbotso/Tamburawa 132kV line. Load loss = 25MW. Frequency was 49.7Hz.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- NIL

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts A2K, U1A & 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 A2S, K4U & S5B.

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

6 WEATHER REPORT:- Rainfall reported at Akangba & Osogbo.

7 INTERNATIONAL LINES:-

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

Maximum load - 304MW at 20:00Hrs.
Minimum load - 223MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 103.0MW at 16:00Hrs.
Minimum load - 70.0MW at 13:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 45.8MW at 13:00Hrs.
Minimum load - 30.7MW at 12:00Hrs.

8 MISCELLANEOUS:-

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).

- 1 00:06 - 08:36Hrs, Jebba 2G4 was shut down on water management. Load loss = 72MW.
- 2 02:20 - 18:04Hrs, Delta GT18 was shut down on frequency management. Load loss = 82MW.
- 3 09:15 - 16:17Hrs, Omotosho NIPP GT4 was shut down to reduce load flow on cct M5W. Load loss = 94.9MW.
- 4 09:17 – 11:25Hrs, Jebba T/S 330kV 75MX Reactor 2R2 was taken out to top up low oil level to normal. No load loss as 330kV 75MX Reactor 2R1 was in service.
- 5 09:18Hrs, Jebba 2G4 was tied to swap with 2G1.
- 6 09:25Hrs, Jebba 2G1 was shut down. No load loss as 68MW was transferred to 2G4.
- 7 14:12Hrs, Azura-Edo GT12 was tied to swap with GT13.
- 8 14:28Hrs, Azura-Edo GT13 was shut down. No load loss as 135MW was transferred to GT12
- 9 15:19Hrs Olorunsogo P/S GT4 was tied to swap with GT5.
- 10 15:55Hrs, Jebba 2G1 was tied to swap with 2G4.
- 11 15:56Hrs, Jebba 2G4 was shut down after its load had been transferred to 2G1.
- 12 15:56Hrs, Olorunsogo P/S GT5 was shut down after its load had been transferred to GT4.
16:32Hrs, Jebba 2G3 was tied to swap with 2G5.
- 14 16:34Hrs, Jebba 2G5 was shut down after its load had been transferred to 2G3.
- 15 17:30Hrs, Jebba 2G5 was tied. The unit was out on water management.
- 16 20:33Hrs of 04/06/2018 – 11:18Hrs of 05/06/2018, Afam IV T/S 30MVA 132/33kV transformer T1 primary CB tripped on differential relay. LHR = 20.8MW.
- 17 22:48 through 24:00Hrs, Jebba 2G3 was shut down on water management. Load loss = 77MW.

***** 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.

11 (A) **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	26
OPTIC FIBRE	13	8
PLS	14	0

11 (B) **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	7	12
132kV	102	85	17

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRO

- 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)
- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- 1 Otta/Ogba 132kV line isolator - defective control shaft.
- 1 Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole
- 1 Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- 1 Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- 1 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.
- 1 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.
- 1 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.
- 1 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.
- 1 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 1 330kV Ikeja West/Osogbo line. - 95 spans.
- 1 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 1 Ikeja West/Akangba 330kV line 2 - 1 span.
- 1 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 1 Akangba/tire 132kV lines 1 & 2 - 1 span.
- 1 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 1 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
- 1 Minna T/S 132kV Bida line - 32 spans
- 1 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, Uguwaji, 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

