

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF WEDNESDAY 18/07/2018

FOR: EVENTS OF TUESDAY 17/07/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,330	21:15	17/07/2018
GENERATION CAPABILITY	7621	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5107.3	-do-	-do-
PEAK GENERATION	4900.8	-do-	-do-
LOWEST GENERATION	2862.4	04:00	17/07/2018
8-HOURLY DURATION PEAK	3488	0100-0800	-do-
	3730.2	0900-1600	-do-
	4900.8	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	357	Jos T/S	01:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe, Kumbotso & Yola T/S	06:00, 12:00 & 14:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.78	04:01
LOWEST FREQUENCY	50.13	12:29

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th July, 2018		No. of days since last total collapse: 10												
Date of last partial collapse: 12 th April, 2018		No. of days since last partial collapse: 92												
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	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						8
	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	255	108
2 JEBBA	HYDRO	332	76
3 SHIRORO	HYDRO	561	215
4 EGBIN ST2 - 5	STEAM	579	483
5 SAPELE	STEAM	52	53
6 DELTA	GAS	570	231
7 AFAM IV-V	GAS	75	75
8 GEREGU GAS	GAS	274	110
9 OMOTOSHO GAS	GAS	137.8	111.4
10 OLORUNSOGO GAS	GAS	131	101.3
11 GEREGU NIPP	GAS	131	80
12 SAPELE NIPP	GAS	197.5	64.1
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	111.5	74.1
15 OMOTOSHO NIPP	GAS	105.2	74.8
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	111.7	76.5
18 OKPAI	GAS	255	170
19 AFAM VI	GAS	135	102
20 IBOM POWER	GAS	108.3	81.9
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	42.1	52.6
24 TRANS AMADI	GAS	54.4	54.8
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	408	225
27 EGBIN ST6	(GAS)	111	110
28 PARAS ENERGY	(GAS)	71	67.8
29 GBARAIN NIPP	GAS	92.3	65.1
TOTAL		4900.8	2862.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	4044.00	168.50	4029.60	167.90
2 JEBBA	HYDRO	3653.00	152.21	3632.60	151.36
3 SHIRORO	HYDRO	7433.00	309.71	7405.74	308.57
4 EGBIN ST2 - 5	STEAM	11437.00	476.54	10851.30	452.14
5 SAPELE	STEAM	1137.80	47.41	1090.20	45.43
6 DELTA	GAS	10969.69	457.07	10782.40	449.27
7 AFAM IV-V	GAS	1753.00	73.04	1748.31	72.85
8 GEREGU GAS	GAS	4694.70	195.61	4667.61	194.48
9 OMOTOSHO GAS	GAS	3007.00	125.29	2984.30	124.35
10 OLORUNSOGO GAS	GAS	2735.78	113.99	2708.95	112.87
11 GEREGU NIPP	GAS	2284.12	95.17	2271.32	94.64
12 SAPELE NIPP	GAS	2583.43	107.64	2562.20	106.76
13 ALAOJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	2491.60	103.82	2444.80	101.87
15 OMOTOSHO NIPP	GAS	2446.90	101.95	2428.20	101.18
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2090.00	87.08	2070.47	86.27
18 OKPAI	GAS	5259.00	219.13	5184.10	216.00
19 AFAM VI	GAS	2933.04	122.21	2840.76	118.37
20 IBOM	GAS	1931.60	80.48	1923.70	80.15
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6564.55	273.52	6542.60	272.61
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1275.70	53.15	1242.90	51.79
25 TRANS AMADI	GAS	1096.80	45.70	1073.30	44.72
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	2622.00	109.25	2499.10	104.13
28 PARAS ENERGY	GAS	1674.20	69.76	1655.70	68.99
29 GBARAIN NIPP	GAS	1781.00	74.21	1764.70	73.53
TOTAL		87,898.91	3,662.45	86,404.86	3,600.20

1.7A

GENERATION POSITION AT 06:00HRS OF WEDNESDAY 18/07/2018

	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, 11 & 12 4	440	270	1G5, 6, 11 & 12 4	270	183	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. Generation reduced on frequency management.
	JEBBA HYDRO	6	2G1 - 5 5	475	400	2G1 & 5 2	165	165	2G2 - 4 - Out on water management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	560	411G1 - 4 4	560	314	411G1 - 3 - Generation reduced on frequency management.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	592	ST1, 2, 4 & 5 4	592	489	ST3 - Out on high vibration since 19th June 2017. ST5 - Out due to boiler tube leakage. Generation reduced on frequency management.
	SAPELE (STEAM)	6	ST2 1	120	52	ST2 1	52	52	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST3 - Out on stator winding problem. 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	615	615	GT9 - 13, 15, 18 & 20 8	415	413	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. GT16 & 19 - Out on frequency management. GT17 - Tripped on bearing vibration than maximum.
	AFAM IV & V (GAS)	8	GT18 1	75	50	GT18 1	50	50	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 - Out due to technical issues. GT19 & 20 - Awaiting major overhaul. Generation reduced on frequency management.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 & 13 2	290	165	GT11 - Out on gas constraint. GT12 & 13 - Generation reduced on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 6, 7 & 8 4	139.8	121.7	GT2 - 5 - Out due to gas constraint. GT1, 6, 7 & 8 - Generation reduced on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 4, 6 & 8 4	132.6	105.8	GT1, 4, 6 & 8 - Generation reduced on frequency management. GT2, 3, 5 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT22 1	145	109	GT21 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	137.4	GT2 - Out due to high air inlet differential pressure. GT4 - Out due to high inlet differential. pressure. Generation reduced on frequency management.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	GT1 1	120	104.6	GT2 & 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT2 & 4 2	240	174.7	GT1 - Out due to gas constraints. GT3 - Out due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.
	IHOVBOR NIPP	4	GT1 1	112.5	112.5	GT1 1	91.6	85.3	GT2 - Out on fault. GT3 - Tripped on high vibration. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	76.4	76.4	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	200	ST18 - Out due to water shortage.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	228	GT11 -13 - Generation reduced on frequency management.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	108	GT11, 12 & ST10 - Out on frequency management.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	71.1	GT3 - Generation reduced on frequency management.
	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	GT1, 5 & 6 3	75	60	GT1, 5 & 6 3	51.8	51.8	GT2 - Tripped on turbine inclusion temperature alarm high trip. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	54.2	GT1, 2 & 4 3	54.2	54.2	GT3 - Out on fault.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out on maintenance.
	SUB TOTAL	131	82	8238	7407.2	55	4696.4	3459	Frequency = 50.56Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 18/07/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	ST6 1	220	101	ST6 1	101	101	Available unit on bar.
PARAS ENERGY	8	GT2 - 9 8	70.2	70.2	GT2 - 9 8	70.2	70.2	Available units on bar.
SUB TOTAL	9	9	290.2	171.2	9	171.2	171.2	
GRAND TOTAL	140	91	8528.2	7578.4	64	4,867.60	3,630.20	Frequency = 50.56Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 17/07/2018.

EGBIN ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY

FEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK
OGBA	U-STEEL				24		NIL
	PTCEXPRESS				24		NIL
	SANKYO				24		NIL
	FEEDER 8				24		NIL
IKORODU	PULK IT				24		NIL
	INDUSTRIAL				24		NIL
	SPINTEX				24		NIL
	DANGOTE				24		NIL
	LAND CRAFT				24		NIL
ALAUSA	TR4 15MVA				24		NIL
	TR5 -15MVA				24		NIL
	ALAUSA				24		NIL
M/LAND	PTC (MARYLAND)				24		NIL
	TOTAL LOAD	0					

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB OF TUESDAY 17/07/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	71	20:00	67.8	04:00	24	1665.6	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: TUESDAY 17/07/2018

COMPANY NAME	VOL-TAGE 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	25	44	09:00	10	16:00	24	682.0	SUPPLY NOT INTERRUPTED
KAM STEEL		15.0	1.0	18:00	0.5	07:00	24	12.6S	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	12.9	19:00	4.8	06:00	24	196.8	SUPPLY NOT INTERRUPTED
KAM INTEGRATED	33kV feeder	15.0	4.8	13:00	2.1	24:00	24	71.0	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.5	13:00	1.2	21:00	24	40.5	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.2	01:00	0.2	01:00	24	4.8	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: WEDNESDAY 18/07/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	131.20	100.29	367.00
TAIL WATER ELEVATION (METERS)	102.40	73.30	271.00
GROSS OPERATING HEAD (METERS)	28.80	26.99	96.00
AVERAGE TURBINE DISCHARGE (M3/SEC)	605.00	657.00	388.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	605.00	657.00	388.00
COMPUTED INFLOW (M3/SEC)	2320.00	796.00	1025.00
STORAGE DIFFERENTIAL	1715.00	139	637.00
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	129	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT TUESDAY 17/07/2018

	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	515.5	21:00	459.32	208.8	06:00
EKO	482.7	22:00	539.35	350.7	03:00
IKEJA	571.9	22:00	599.12	418.8	13:00

2.0 GAS POSITION: WEDNESDAY 18/07/2018

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	489	1100		703	397
DELTA (GAS)	413	915		415	500
OMOTOSHO GAS	121.7	336.8		152	184.8
OMOTOSHO NIPP	174.7	500		240	260
OLORUNSOGO (GAS)	105.8	336		152	184
OLORUNSOGO NIPP	104.6	750		120	630
SAPELE NIPP	137.4	500		225	275
SAPELE STEAM	52	720		52	668
AFAM IV-V	50	300		50	250
AFAM VI	108	650		150	500
GEREGU GAS	165	435		290	145
GEREGU NIPP	109	435		145	290
OKPAI(GAS/STEAM)	200	480		300	180
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	85.3	450		91.6	358.4
IBOM	71.1	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2386.6	9234.80		3200.6	6034.2

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : TUESDAY 17/07/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 18/07/2018 = 0MW. FREQUENCY 50.56Hz.

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 Wednesday 18/07/2018 as at 0600Hrs was = 3632.3MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Alaoji NIPP GT1, 2 & 4	360	0	360	1689
2	Omotosho NIPP GT1	120	0	120	
3	Geregu NIPP GT21 & 23	290	0	290	
4	Omotosho Gas GT2 - 5	152	0	152	
5	Olorunsogo NIPP GT2 & 3	240	0	240	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Olorunsogo Gas GT2, 3, 5 & 7	152	0	152	
8	Geregu Gas GT11	145	0	145	
			0	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 1609.12MMSCF OF GAS (EQUIVALENT TO 6034.2MW 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 FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Omotosho Gas GT1, 6, 7 & 8	139.8	121.7	18.1	1623.3
2	Geregu NIPP GT22	145	109	36	
3	Azura Edo GT11 - 13	461	228	233	
4	Shiroro 411G1 - 3	420	165	255	
5	Ibom Power GT3	115	71.1	43.9	
6	Delta GT16 & 19	180	0	180	
7	Geregu Gas GT12 &13	290	165	125	
8	Sapele NIPP GT3	112.5	0	112.5	
9	Egbin ST1, 2, 4 & 5	592	489	103	
10	Olorunsogo Gas GT1, 4, 6 & 8	132.6	105.8	26.8	
11	Afam VI GT11, 12 & ST10	490	0	490	
			0	0	
			0	0	
4.4 DUE TO WATER MANAGEMENT					
1	Jebba 2G2 - 5	320	0	320	320
			0	0	
Grand Total					3632.3

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):-

- 1 06:14 - 19:30Hrs, Delta GT10 tripped on loss of excitation. LHR = 20MW.
- 2 21:56 through 24:00Hrs, Omoku GT2 tripped on turbine compartment temperature alarm high trip. LHR = 10MW.
- 3 17:05 through 24:00Hrs, Ihovbor NIPP GT3 tripped on high vibration. LHR = 94.1MW.
- 4 17:25Hrs, Trans-Amadi GTs 1 & 2 tripped on REF. LHR = 49.9MW.
19:04Hrs - GT2 was tied & 19:07Hrs - GT1 was tied.

5(B) FORCED OUTAGES (TRANSMISSION):

- 1 01:30 – 10:04Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on micom relay >L3 T>L1, L2 & L3. LHR = 40MW.
- 2 08:06 – 12:35Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary & secondary CBs tripped.
On primary CB : Differential relay.
On secondary CB: O/C Red & Yellow Phases. LHR = 43MW.
- 3 09:30 – 10:04Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom relay – i> L3, Ti > L1 – 3. LHR = 40MW.
- 4 09:49 – 09:54Hrs, Birnin-Kebbi/Sokoto/Talatamafara/Gusau 132kV line CB tripped at Birnin-Kebbi T/S on O/C Red Phase, E/F and 86lockout relays.
LHR = 66MW.
- 5 11:28 – 12:25Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on delayed E/F. LHR = 45MW
- 6 11:29 – 12:50Hrs, Itu/Uyo 132kV line CB tripped at Itu T/S on instantaneous earth fault. LHR = 40MW.
- 7 11:30 – 11:50Hrs, Uyo T/S 60MVA 132/33kV transformer T2 primary CB tripped on E/F relay. LHR = 0.5MW.
- 8 12:24 – 20:22Hrs, Apapa T/S 40MVA 132/33kV transformer TR4 primary and secondary CBs tripped on Buchholz relay. LHR = 11MW.
- 9 12:50 – 13:23Hrs, Ajaokuta/Mines 132kV line CB tripped at Ajaokuta T/S without relay indication. LHR = 8MW.

5 (C) PLANNED OUTAGES:-

- 1 08:46 - 18:58Hrs, Trans-Amadi GT4 was shut down for maintenance. Load loss = 20.8MW
- 2 10:32 - 12:23Hrs, Ikorodu T/S 60MVA 132/33kV transformer T1 was taken out for annual preventive maintenance. Load loss = 8MW.
- 3 10:59 – 19:15Hrs, Akangba T/S 150MVA 330/132/33kV transformer 5T4A was taken out to enable maintenance crew carry out annual preventive maintenance on the transformer. Load loss = 37MW.
- 4 12:50 – 16:47Hrs, Onitsha/Alaoji 330kV line (cct T4A) was taken out to enable MBH contractor carry out trip test on CB #9 and commission the breaker at Onitsha T/S. No load loss as cct A2K was in service.
- 5 12:50 – 14:28Hrs, Shiroro P/S unit 4 330kV tie CB isolator #3109 was taken out to replace cut Blue Phase up-riser conductor. Load loss = 60MW.

5(D) URGENT OUTAGES:

- 1 06:38 - 14:42Hrs, Ikeja West/Agbara 132kV line 1 was taken out due to low DC problem at Agbara T/S. Load loss = 14MW.
- 2 09:56 – 15:56Hrs, Delta/Oghara 132kV line was taken out to treat hot spot on Blue Phase isolator clamp on 132kV main bus bar 1 at Delta T/S.
Load loss = 78MW.
- 3 09:57 – 15:57Hrs, Delta/Effurun 132kV line was taken out for safe working space to enable maintenance crew treat hot spot on Blue Phase isolator clamp on bus bar 1 at Delta T/S. Load loss = 49.4MW.
- 4 11:46 – 15:09Hrs, Shiroro P/S 411G4 was shut down due to planned outage on 330kV tie CB isolator #3109. Load loss = 60MW.
- 5 12:30 – 14:19Hrs, Gbarain NIPP GT2 was shut down due to low gas pressure. Load loss = 86MW.

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).

5 (E) EMERGENCY OUTAGES:- NIL

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- NIL

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts A1K, 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 K4U, J2H & S5B.

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

6 WEATHER REPORT:- Rainfall was reported at Abuja, Osogbo, Ibadan, Alaoji.

7 INTERNATIONAL LINES:-

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

Maximum load - 268MW at 21:00Hrs.

Minimum load - 165MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 100.0MW at 02:00Hrs.

Minimum load - 78.0MW at 07:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 38.0MW at 21:00Hrs.

Minimum load - 24.0MW at 03:00Hrs.

8 MISCELLANEOUS:-

1 00:05 – 06:46Hrs, Jebba 2G5 was shut down on frequency management. Load loss = 54MW.

2 09:54rs, Omotosho GT6 was tied to swap with GT5.

3 10:18Hrs, Omotosho GT5 was shut down. No load loss as 30.5MW was transferred to GT6

4 10:53Hrs, Geregu gas GT13 was tied to swap with GT11.

5 11:10Hrs, Geregu Gas GT11 was shut down. No load loss as 80MW was transferred to GT13.

6 11:28 – 12:52Hrs, Ibom Power GT3 went on Island operation feeding Eket, Itu & Uyo due to tripping of Aba/Itu 132kV line. Load reduced from 100 – 36MW.

7 12:38Hrs, Delta GT19 was tied. The unit was out on frequency management.

8 13:08Hrs, Olorunsogo NIPP GT1 was tied to swap with GT2.

9 13:18Hrs, Olorunsogo NIPP GT2 was shut down. No load loss as 105MW was transferred to GT1.

10 17:50Hrs, Kainji 1G6 was tied. The unit was out on maintenance.

12 18:37Hrs, Ihovbor NIPP GT1 was tied. The unit was out due to gas constraint.

13 19:17Hrs, Jebba 2G3 was tied. The unit was out on water management.

14 19:22Hrs, Sapele NIPP GT3 was tied. The unit was out on frequency management.

15 19:24Hrs, Shiroro 411G1 was tied. The unit was out on frequency management.

16 20:48Hrs, Jebba 2G2 was tied. The unit was out on water management.

17 20:49Hrs, Delta GT16 was tied. The unit was out on frequency management.

18 20:50Hrs, Uyo T/S 60MVA 132/33kV transformer T2 was restored. The transformer was out on fault since 23:10Hrs of 16/07/2018.

19 21:38Hrs, Omotosho NIPP GT4 was tied. The unit was out due to gas constraint.

**** 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.

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	27
OPTIC FIBRE	13	8
PLS	14	0

11 SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	8	11
132kV	102	89	13

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 available reactor.

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.
- Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- 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.

SHIRORO REGION

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

PORT HARCOURT REGION

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

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 :

- Benin, Ikeja West, Onitsha, Egbin, Uguwaji, Osogbo, Kaduna, 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

