

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF TUESDAY 05/06/2018

FOR: EVENTS OF MONDAY 04/06/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	21:00	04/06/2018
GENERATION CAPABILITY	7286.3	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5161.1	-do-	-do-
PEAK GENERATION	4863.1	-do-	-do-
LOWEST GENERATION	3392.3	08:00	04/06/2018
8-HOURLY DURATION PEAK	3925.6	0100-0800	-do-
	4036.9	0900-1600	-do-
	4863.1	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	360	Ikot-Ekpene T/S	14:00
LOWEST VOLTAGE FOR THE DAY	290	Gombe T/S	13:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.88	06:57
LOWEST FREQUENCY	50.07	21:02

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 115												
Date of last partial collapse: 12 th April., 2018		No. of days since last partial collapse: 51												
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	180	156
2 JEBBA	HYDRO	250	161
3 SHIRORO	HYDRO	494	429
4 EGBIN ST2 - 5	STEAM	489	432
5 SAPELE	STEAM	0	0
6 DELTA	GAS	591	259
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	428	245
9 OMOTOSHO GAS	GAS	136.6	121.4
10 OLORUNSOGO GAS	GAS	162.5	141.2
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	209.7	125.3
13 ALAOJI NIPP	GAS	112.2	85.6
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	219	170.9
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	216.3	103.1
18 OKPAI	GAS	272	186
19 AFAM VI	GAS	436	211
20 IBOM POWER	GAS	102	67.2
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	81.6	80
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	302	250
27 EGBIN ST6	(GAS)	111	100
28 PARAS ENERGY	(GAS)	70.2	68.6
29 GBARAIN NIPP	GAS	0	0
TOTAL		4863.1	3392.3

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	4410.00	183.75	4394.80	183.12
2 JEBBA	HYDRO	4183.00	174.29	4160.20	173.34
3 SHIRORO	HYDRO	10815.00	450.63	10785.02	449.38
4 EGBIN ST2 - 5	STEAM	10929.00	455.38	10344.20	431.01
5 SAPELE	STEAM	66.90	2.79	63.80	2.66
6 DELTA	GAS	11101.19	462.55	10847.70	451.99
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	8311.10	346.30	8279.09	344.96
9 OMOTOSHO GAS	GAS	2994.00	124.75	2970.70	123.78
10 OLORUNSOGO GAS	GAS	3574.72	148.95	3543.96	147.67
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	3973.87	165.58	3954.79	164.78
13 ALAOJI NIPP	GAS	2201.87	91.74	2179.26	90.80
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	4302.40	179.27	4271.50	177.98
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	3980.00	165.83	3954.90	164.79
18 OKPAI	GAS	5237.00	218.21	5166.40	215.27
19 AFAM VI	GAS	7448.90	310.37	7395.95	308.16
20 IBOM	GAS	1761.24	73.39	1752.00	73.00
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6185.35	257.72	6161.70	256.74
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1953.10	81.38	1831.49	76.31
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	2531.00	105.46	2402.60	100.11
28 PARAS ENERGY	GAS	1650.70	68.78	1645.20	68.55
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
TOTAL		97,610.34	4,067.10	96,105.26	4,004.39

1.7A GENERATION POSITION AT 06:00HRS OF TUESDAY 05/06/2018

	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	134	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 mangement.
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1 & 5 2	190	157	2G2-4 - Out on water management. 2G6 – Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	560	560	411G1 - 4 4	486	486	Available units on bar.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	468	ST1, 2, 4 & 5 4	468	461	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, 16 19 & 20 10	515	501	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. GT18 - 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 3	435	384	Available units on bar.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 6, 7 & 8 4	152	141	GT2 - 5 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 3, 5, 6 & 8 5	190	169.1	GT1, 4 & 7 - Out due to gas constraint.
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	GT1 & 3 2	225	167.3	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	90.9	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 & 4 2	240	195.8	GT2 - Out due to gas constraint. GT3 - Shut down 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 - 3 3	337.5	315	GT1 & 3 2	205	179.2	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	221	ST18 - Out due to water shortage.
	AZURA - EDO	3	GT11 - 13 3	459	459	GT11 & 13 2	306	250	GT12 - Out on line constraint.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	450	GT11 - 13 3	450	375	ST10 - Out on frequency management.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	76.5	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	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	80	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	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	81	8088.5	7220	53	4667	4068.8	Frequency = 50.37Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF TUESDAY 05/06/2018 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 - MONDAY 04/06/2018

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	70.2	19:00	24	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF MONDAY - 04/06/2018

COMPANY NAME	VOLTAGE LEVEL	EXPECTED CONTRACTUAL LOAD (MW)	MAX	TIME	HOUR IN SERVICE	REMARK
INNER GALAXY	132kV line	25	20	06:00	24	NIL
KAM STEEL		Not commissioned				
ASAKA CEMENT		0	12.3	15:00	23	Loss of supply due to load transfer.
KAM INTEGRATED	33kV feeder	15	1.2	10:00	24	NIL
OLAM FLOUR MILLS		3	0.8	19:00	24	NIL
LORDSMITH		3	0.5	17:00	24	NIL

1.8 HYDROLOGICAL DATA: MONDAY 04/06/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	131.24	99.91	360.35
TAIL WATER ELEVATION (METERS)	101.95	73.3	272
GROSS OPERATING HEAD (METERS)	29.29	26.61	88.85
AVERAGE TURBINE DISCHARGE (M3/SEC)	657.00	721.00	587.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	657	721	587
COMPUTED INFLOW (M3/SEC)	240.00	756.00	136.00
STORAGE DIFFERENTIAL	-417.00	35	-451
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 MONDAY 04/06/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	542	20:00	511.21	325.9	09:00
EKO	470.9	05:00	588.98	328.5	08:00
IKEJA	601.3	21:00	666.8	399.9	14:00

2.0 GAS POSITION: TUESDAY 05/06/2018

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	461	1100		468	632
DELTA (GAS)	501	915		515	400
OMOTOSHO GAS	141	336.8		152	184.8
OMOTOSHO NIPP	195.8	500		240	260
OLORUNSOGO (GAS)	169.1	336		190	146
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	167.3	500		225	275
SAPELE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	375	650		450	200
GEREGU GAS	384	435		435	0
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	221	480		300	180
ALAOJI NIPP	90.9	504		120	384
IHOVBOR NIPP	179.2	450		205	245
IBOM	76.5	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2961.8	9234.80		3415	5819.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : MONDAY 04/06/2018

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum			
AVERAG			

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF TUESDAY 05/06/2018 = 0MW. FREQUENCY 50.37Hz.

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 = 2657.5MW.

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 GT3, 4 & 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 1551.94MMSCF OF GAS (EQUIVALENT TO 5819.8MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Trans-Amadi GT1 & 2	40	0	40	231.5
2	Ibom GT3	115	76.5	38.5	
3	Azura-Edo	153	0	153	
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Afam VI ST10	190	0	190	290
2	Delta GT18	100	0	100	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
4.4 DUE TO WATER MANAGEMENT					
1	Jebba 2G2 - 4	285	0	285	285
Grand Total					2657.5

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):- Nil.

5(B) FORCED OUTAGES (TRANSMISSION):

- 1 08:14 – 08:24Hrs, Abuja Central Area T/S 60MVA 132/33kV transformer TR2 primary CB tripped on O/C relay. LHR = 49MW.
- 2 13:22 - 13:53Hrs, Uguwaji/Makurdi 330kV line 2 (cct U2A) CBs tripped at both ends on the following relay indications:
At Uguwaji T/S: ABB Relay: DEF. O/C, E/F and lock out.
At Makurdi T/S: Line differential Relay: Trip ABC, ONs, OPFP 1008ms, ABC OP/ROC1 406A, fault location = 1706.2km, fault phase current = 0.298A, fault radiant current = 0.33A, maximum differential current = 0.00A, trip coils PHA trip, PHB trip, PHC trip. No load loss as ccts K3U and A2S were in service.
- 3 13:52 – 14:15Hrs, Alaoji/Ikot-Ekpene 330kV line 1 (cct A1K) CBs tripped at both ends on the following relay indications:
At Alaoji T/S: SEL Relay trip: Phase AG zone 1.
At Ikot-Ekpene T/S: Over voltage. LHR = 158MW.
- 4 13:52 – 14:20Hrs, Odukpani/Ikot-Ekpene 330kV line 1 (cct D1K) CB tripped at Ikot-Ekpene T/S on over voltage. LHR = 28MW.
- 5 13:52 – 13:57Hrs, Ikot-Ekpene/Uguwaji 330kV line 3 (cct K3U) CB tripped at Ikot-Ekpene T/S on Over voltage. LHR = 129MW
- 6 14:30 – 14:51Hrs, New Haven/Nkalagu 132kV line 1 tripped on instantaneous O/C Red Phase, instantaneous E/F & E/F. Load loss = 64MW.
- 7 17:10 – 17:35Hrs, Uyo T/S 60MVA 132/33kV transformer T3 primary CB tripped on SBEF. No load loss as the transformer was on soak.
- 8 18:30 – 19:04Hrs, Benin/Asaba 330kV line (cct B3D) CBs tripped at both ends on the following relay indications:
At Benin T/S: O/C & E/F, E/F pick up, PU time = 3009ms, trip time = 2921ms, distance = 40.1km.
At Asaba T/S: O/C Red Phase & E/F zone 4. LHR = 9.0MW.
- 9 20:33Hrs, Afam 1 T/S 30MVA 132/33kV transformer T1 tripped on Siemens Relay: Differential pick up, differential trip, PU time = 103ms, trip-trip = 8ms. LHR = 20.8MW.
- 10 22:16 – 22:30Hrs, Kumbotso T/S 150MVA 330/132/33kV transformer T2A secondary CB tripped on O/C Blue Phase relay. LHR = 118MW.

5 (C) PLANNED OUTAGES:-

- 1 09:39 - 12:24Hrs, Gombe T/S 150MVA 330/132/33kV transformer T1A was taken out to replace burnt Yellow & Blue phase bus isolator fingers. Load loss = 69MW
- 2 12:55 – 20:00Hrs, Ikeja West/Ejigbo 132kV line 1 CB was taken out of service for annual preventive maintenance on the line CB and its associated equipment. LHR = 48MW.
- 3 13:20 – 16:30Hrs, Lekki/Alagbon 330kV line (cct E1B) was taken out to enable maintenance crew and Pivot/Siemens contractors test and trouble shoot suspected open cct on diameter D02, on Red Phase of the line. No load loss as the line was on soak.

5(D) URGENT OUTAGES:

- 1 11:15 - 18:15Hrs, Kukwaba T/S 60MVA 132/33kV transformer TR1 was taken out to treat hot spot on the Red Phase secondary isolator conductor clamp. Load loss = 21.2MW.

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 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.

7 INTERNATIONAL LINES:-

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

Maximum load - 285MW at 20:00Hrs.
Minimum load - 222MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 94.0MW at 18:00Hrs.
Minimum load - 73.0MW at 19:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 47.0MW at 15:00Hrs.
Minimum load - 24.0MW at 12:00Hrs.

8 MISCELLANEOUS:-

- 1 00:14 - 15:36Hrs, Delta GT19 was shut down on frequency management. Load loss = 79MW.
- 2 06:52 - 18:25Hrs, Delta GT16 was shut down on frequency management. Load loss = 80MW.
- 3 06:58 - 19:06Hrs, Delta GT18 was shut down on frequency management. Load loss = 84MW.
- 4 07:09 - 17:33Hrs, Afam VI GT11 was shut down on frequency management. Load loss = 110MW.
- 5 09:15 – 09:49Hrs, Osogbo T/S carried out carrier test on ccts J1H, J2H, H1W & H3G.
- 6 10:57Hrs of 23/06/2018 – 15:53Hrs, Olorunsogo T/S 105MVA 10.5/330kV transformer T2 was taken out of service to enable Pacific Generation Company at Olorunsogo G/S carry out maintenance on the primary 10.5kV Bus bar. No load loss as the transformer was on soak.
- 7 11:00Hrs, Alaoji NIPP GT4 was tied to swap with GT1.
- 8 11:25Hrs, Alaoji NIPP GT1 was shut down. No load loss as 86MW was transferred to GT4.
- 9 16:41Hrs, Olorunsogo Gas GT3 was tied to swap with GT1.
- 10 17:01Hrs, Jebba/Osogbo 330kV line 2 (cct J2H) was restored at Osogbo end. The line was out on voltage control.

11 (A) COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	15
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	6	2
330kV	19	8	11
132kV	102	85	17

- 11 17:05Hrs, Olorunsogo Gas GT1 was shut down after its load (30MW) had been transferred to GT3.
- 12 17:31 through 24:00Hrs Mando T/S 75MX Shunt Reactor 3R3 was switched off for voltage control. Voltage Profile: 310/319kV.
- 13 18:48Hrs of 03/06/2018 – 17:14Hrs, Abuja Central Area T/S 60MVA 132/33kV transformer T1 primary CB tripped on O/C alongside 250KVA 33/0.415kV ETR1 on Buchholz relay. LHR = 18MW.
- 14 19:27Hrs, Lokoja/Gwagwalada 330kV line 2 was restored. The line was out on voltage control. Voltage profile at Lokoja T/S = 324/326kV, at Gwagwalada T/S = 309/321kV.
- 15 20:20Hrs, Jebba 2G4 was tied. The unit was out on water management.
- 16 22:42Hrs of 03/06/2018 – 14:18Hrs, Ugwuaji T/S 150MVA 330/132/34.5kV transformer T01 tripped on differential and REF protection relay. The transformer was tested okay before restoration. LHR = 14.2MW.
- ***** 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(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

