

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SUNDAY 05/08/2018

FOR: EVENTS OF SATURDAY 04/08/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	21:30	04/08/2018
GENERATION CAPABILITY	8000.6	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5260.5	-do-	-do-
PEAK GENERATION	4826.5	-do-	-do-
LOWEST GENERATION	3243.3	05:00	04/08/2018
8-HOURLY DURATION PEAK	3602.6	0100-0800	-do-
	3486.5	0900-1600	-do-
	4826.5	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	351	Jos T/S	01:00
LOWEST VOLTAGE FOR THE DAY	297	Sakete T/S	21:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.81	00:09
LOWEST FREQUENCY	49.47	19:29

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th July, 2018		No. of days since last total collapse: 18												
Date of last partial collapse: 12 th April, 2018		No. of days since last partial collapse: 110												
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	0	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	238	214
2 JEBBA	HYDRO	409	218
3 SHIRORO	HYDRO	580	315
4 EGBIN ST2 - 5	STEAM	579	507
5 SAPELE	STEAM	0	51
6 DELTA	GAS	497	387
7 AFAM IV-V	GAS	0	54
8 GEREGU GAS	GAS	265	112
9 OMOTOSHO GAS	GAS	166.7	106.5
10 OLORUNSOGO GAS	GAS	169.5	121.1
11 GEREGU NIPP	GAS	125	105
12 SAPELE NIPP	GAS	86.7	65.1
13 ALAOJI NIPP	GAS	81.7	0
14 OLORUNSOGO NIPP	GAS	112.2	0
15 OMOTOSHO NIPP	GAS	102.4	80.1
16 ODUKPAI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	92.8	71.9
18 OKPAI	GAS	361	266
19 AFAM VI	GAS	125	103
20 IBOM POWER	GAS	107.6	72.7
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	54.9	45
24 TRANS AMADI	GAS	66.2	31.1
25 RIVERS IPP	(GAS)	103	0
26 AZURA - EDO IPP	(GAS)	333	250
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	69.4	67.8
29 GBARAIN NIPP	GAS	101.4	0
TOTAL		4826.5	3243.3

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	5796.00	241.50	5781.60	240.90
2 JEBBA	HYDRO	6129.00	255.38	6106.76	254.45
3 SHIRORO	HYDRO	8295.00	345.63	8273.89	344.75
4 EGBIN ST2 - 5	STEAM	11671.00	486.29	10939.50	455.81
5 SAPELE	STEAM	801.30	33.39	707.40	29.48
6 DELTA	GAS	11329.21	472.05	11213.70	467.24
7 AFAM IV-V	GAS	792.00	33.00	787.34	32.81
8 GEREGU GAS	GAS	3553.40	148.06	3530.31	147.10
9 OMOTOSHO GAS	GAS	3166.00	131.92	3141.10	130.88
10 OLORUNSOGO GAS	GAS	3140.62	130.86	3112.76	129.70
11 GEREGU NIPP	GAS	2814.25	117.26	2800.72	116.70
12 SAPELE NIPP	GAS	2255.55	93.98	2237.13	93.21
13 ALAOJI NIPP	GAS	310.81	12.95	299.92	12.50
14 OLORUNSOGO NIPP	GAS	932.90	38.87	890.60	37.11
15 OMOTOSHO NIPP	GAS	2275.20	94.80	2253.50	93.90
16 ODUKPAI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2173.38	90.56	2154.18	89.76
18 OKPAI	GAS	6917.00	288.21	6746.60	281.11
19 AFAM VI	GAS	2835.19	118.13	2796.10	116.50
20 IBOM	GAS	1845.40	76.89	1837.00	76.54
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6643.85	276.83	6627.20	276.13
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1315.00	54.79	1284.70	53.53
25 TRANS AMADI	GAS	1443.00	60.13	1411.40	58.81
26 RIVERS IPP	GAS	1540.10	64.17	1534.41	63.93
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1648.90	68.70	1644.70	68.53
29 GBARAIN NIPP	GAS	264.80	11.03	256.20	10.68
TOTAL		89,888.86	3,745.37	88,368.72	3,682.03

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 05/08/2018

	STATIONS	NO OF INSTALLED UNITS	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS (MW) AT 50.44Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6 & 11 3	340	340	1G5, 6 & 11 3	190	190	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. 1G12 - Out on maintenance. Generation reduced due to low gross operating head.
	JEBBA HYDRO	6	2G1 - 5 5	475	450	2G1, 4 & 5 3	243	243	2G2 & 3 - Out on frequency management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 4 4	600	308	411G2 - 4 - Generation reduced on frequency management
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	579	ST1, 2, 4 & 5 4	579	445	ST3 - Out on high vibration since 19th June 2017. Generation reduced on frequency management
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST2 - Tripped on burner failure. 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	408	408	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	54	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 - Out due to technical issues. GT18 - Out due to gas constraint. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 1	145	123	GT12 & 13 - Out on frequency management.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 5, 6, 7 & 8 5	171.4	151.7	GT2, 3 & 4 - Out due to gas constraint. Generation reduced due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 2, 4, 5 & 8 5	170.4	143.1	GT3, 6 & 7 - Out due to gas constraint. Generation reduced due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT23 1	145	118	GT21 - Out on maintenance. GT22 - Out due to gas constraint.
	SAPELE NIPP	4	GT1, 3 & 4 3	337.5	337.5	GT3 1	112.5	81.3	GT1 & 4 - Out on frequency management. GT2 - Out due to high air inlet differential pressure.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	GT2 1	81.6	81.6	GT1 & 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	114	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 1	120	95.5	GT1 - Out due to gas constraint. GT3 - Out 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 & 2 2	225	225	GT2 1	84.9	84.9	GT1 - Out on frequency management. GT2 - On manual frequency adjustment. GT3 - Tripped on high vibration. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	84.2	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	427	GT11, 12 & ST18 3	427	269	GT11, 12 & ST18 - Generation reduced on frequency management.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT12 & 13 2	306	150	GT11 - Out on frequency management. GT12 & 13 - Generation reduced on frequency management.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	119	GT11, 12 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	81.4	Available unit on bar.
	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 3	75	60	GT1, 2 & 5 3	56.1	56.1	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 Out on maintenance. Available units on bar.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	63.8	GT1, 2 & 4 3	63.8	63.8	GT3 - Out on fault. Available units on bar.
RIVERS	1	GT1 1	180	160	GT1 1	160	90	GT1 - Generation reduced on frequency management.	
SUB TOTAL	131	83	8428	7882.8	54	4561.2	3500.6	Frequency = 50.44Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 05/08/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	0	0	0	0	0	0	0	ST6 - Shut down on Egbin management decision.
		0							
PARAS ENERGY	8	GT2 - 9	69.4	69.4	GT2 - 9	69.4	69.4	69.4	Available units on bar.
		8			8				
SUB TOTAL	9	8	69.4	69.4	8	69.4	69.4	69.4	
GRAND TOTAL	140	91	8497.4	7952.2	62	4,630.60	3,570.00	3,570.00	Frequency = 50.44Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - FRIDAY 04/08/2018.								
EGBIN ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY								
FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK	
OGBA	U-STEEL	ON	0100HRS		24		NIL	
	PTCEXPRESS	8	1400HRS		22		PLANNED OUTAGE	
	SANKYO	ON	0100HRS		24		NIL	
	FEEDER 8	10	2000HRS		24		NIL	
IKORODU	PULK IT	2	0100HRS		24		NIL	
	INDUSTRIAL	3	0300HRS		24		NIL	
	SPINTEX	5	0800HRS		24		NIL	
	DANGOTE	1	0100HRS		24		NIL	
	LAND CRAFT	13	0400HRS		24		NIL	
ALAUUSA	TR4 15MVA	5.5	1000HRS		24		NIL	
	TR5 -15MVA	4.1	1100HRS		24		NIL	
	ALAUUSA	10.1	1000HRS		19		PLANNED OUTAGE	
M/LAND	PTC (MARYLAND)	14	1500HRS		11		TRIPPING ON T2-60 MVA SEC.CB (GLOWING GLOWING ON BUS ISOLATOR BOLT & NUT)	
	TOTAL LOAD	75.7						

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB OF FRIDAY 04/08/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	70.2	19:00	67.0	02:00	24	1646.4	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: FRIDAY 04/08/2018

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		ON	ON	ON	ON	ON	ON	ON	NIL
KAM STEEL	132kV line 2	15.0	0.9	12:00	0.1	09:00	24	7.5	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	8.5	05:00	0	19:00	24	70.4	NIL
KAM INTEGRATED		15.0	4.0	11:00	.2.0	07:00	24	70.8	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS	33kV feeder	15.0	2.2	16:00	0.7	04:00	24	38	SUPPLY NOT INTERRUPTED
LORDSMITH		ON	ON	ON	ON	ON	ON	ON	NIL

1.8 HYDROLOGICAL DATA: SUNDAY 05/08/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.54	101.50	370.31
TAIL WATER ELEVATION (METERS)	103.55	74.10	271.00
GROSS OPERATING HEAD (METERS)	29.99	27.40	99.31
AVERAGE TURBINE DISCHARGE (M3/SEC)	860.00	1056.00	400.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	860.00	1056.00	400.00
COMPUTED INFLOW (M3/SEC)	2319.00	1125.00	642.00
STORAGE DIFFERENTIAL	1459.00	69	242.00
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	388.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	129	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT SATURDAY 04/08/2018

	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	489.1	21:00	480.19	272.1	05:00
EKO	383.4	23:00	559.31	269.5	14:00
IKEJA	583.8	21:00	836.33	404.3	03:00

2.0 GAS POSITION: SUNDAY 05/08/2018

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	445	1100		476	624
DELTA (GAS)	408	915		408	507
OMOTOSHO GAS	151.7	336.8		190	146.8
OMOTOSHO NIPP	95.5	500		120	380
OLORUNSOGO (GAS)	143.1	336		190	146
OLORUNSOGO NIPP	0	750		120	630
SAPELE NIPP	81.3	500		112.5	387.5
SAPELE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	119	650		150	500
GEREGU GAS	123	435		145	290
GEREGU NIPP	118	435		145	290
OKPAI (GAS/STEAM)	269	480		427	53
ALAOJI NIPP	81.6	504		120	384
IHOVBOR NIPP	84.9	450		84.9	365.1
IBOM	81.4	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2201.5	9234.80		2803.4	6431.4

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 04/08/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 05/08/2018 = 0MW. FREQUENCY 50.44Hz.

0	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 Sunday 05/08/2018 as at 0600Hrs was = 3974.7MW.

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 & 4	240	0	240	1848.2
2	Omotosho NIPP GT1	120	0	120	
3	Geregu NIPP GT22	145	0	145	
4	Omotosho Gas GT1 - 8	304	151.7	152.3	
5	Olorunsogo NIPP GT1 & 3	240	0	240	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Olorunsogo Gas GT1 - 8	304	143.1	160.9	
8	Afam VI GT11, 12 & ST10	490	0	490	
9	Rivers IPP GT1	160	90	70	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1715.04MMSCF OF GAS (EQUIVALENT TO 6431.4MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
				0	0
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Geregu Gas GT12 & 13	290	123	167	2126.5
2	Azura Edo GT11 - 13	461	150	311	
3	Shiroro 411G2 - 4	450	158	292	
4	Okpai GT11, 12 & ST18	427	269	158	
5	Delta GT16 & 19	180	0	180	
6	Olorunsogo NIPP GT2 & 3	240	0	240	
7	Omotosho NIPP GT4	120	0	120	
8	Egbin ST1, 2, 4 & 5	579	445	134	
9	Geregu NIPP GT23	145	118	27	
10	Ihovbor NIPP GT1	112.5	0	112.5	
11	Jebba 2G2 & 3	160	0	160	
12	Sapele NIPP GT1 & 4	225	0	225	
				0	
				0	
				0	
				0	
4.1 DUE TO WATER MANAGEMENT:					
				0	
Grand Total					3974.7

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):-

- 09:49 - 19:34Hrs, Shiroro 411G3 tripped on intake gate shut down. LHR = 50MW
- 16:30 through 24:00Hrs, Sapele steam ST2 tripped on burner failure. LHR = 50MW.

5(B) FORCED OUTAGES (TRANSMISSION):

- 09:27 - 10:10Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary CB tripped on SBEF. LHR = 32MW
- 12:07 – 12:25Hrs, Delta/Benin 330kV line (cct G3B) CBs tripped at both ends on the following relay indications:
At Delta T/S: Siprotec Relay: Zone 1 trip, relay trip Red phase, E/F distance pick up = LIE, PU time = 336ms, trip time = 272ms, distance = 35.7km
At Benin T/S: ABB Relay: Trip-trip, trip-TRL1, PHS-STFWL1PE, ZM1-trip, EFC-CS, AR in progress, DEF-Block, fuse VTSZ ZM2 & ZM3-start, ZCIP-CSL, TOC-STL1, fault loop = L1-N, distance = 93.3km
Auxiliary Relay: MVAJ K86A, lock out trip, carrier signal receive. No load interruption as ccts S4G, S3B and S4B were in service.
- 20:01 – 21:30Hrs, Olorunsogo/Ikeja West 330kV line (cct R1W) CB tripped at Olorunsogo T/S on IET1 – OP, Phases AB & C, trip time = 1931ms. No load interruption as ccts R2A, H2A & H1W were in service.

5 (c) PLANNED OUTAGES:-

- 08:16Hrs, Jos/Gombe 330kV line (cct S1E) was taken out to replace defective isolators with new ones at Jos T/S. Load loss = 40MW
- 11:04 - 14:01Hrs, Mando/Jos 330kV line was taken out to enable maintenance crew check and rectify the cause of the line CB which failed to response to remote signal at Mando T/S. No load interruption as the line was on soak.
- 11:53 - 18:35Hrs, New Haven T/S 60MVA 132/33kV transformer TR3 was taken out to install New secondary bus section isolator. Load loss = 17.4MW
- 11:54 - 16:55Hrs, New Haven T/S 60MVA 132/33kV transformer TR4 was taken out to install New secondary bus section isolator. Load loss = 35.2MW
- 12:20 – 16:30Hrs, Lekki T/S 300MVA 330/132kV transformer TR1 was taken out for annual preventive maintenance on the transformer. Load loss = 46MW.
- 13:18 – 18:33Hrs, Alagbon T/S 300MVA 330/132kV transformer TR1 was taken out to seal oil leakage on the diverter switch. Load loss = 90MW.

5(D) URGENT OUTAGES:-

- 13:09 - 14:47Hrs, Osogbo/Akure/Ado-Ekiti 132kV line was taken out to enable maintenance crew replace burnt Blue phase Bolts and Nuts with new ones on the secondary bushing terminal clamp of 30MVA 132/33kV transformer T1 at Akure T/S. Load loss = 46MW
- 14:26 through 24:00Hrs, Afam IV GT18 was shut down due to low gas pressure. Load loss = 54MW

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

5 (E) EMERGENCY OUTAGES:-

The under mentioned lines were opened on frequency control.

- 19:22 – 19:35Hrs, Osogbo/Akure/Ado-Ekiti 132kV line. Load loss = 47MW. Frequency was 49.58Hz.
- 19:29 – 19:44Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. Load loss = 60MW. Frequency was 49.47Hz.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- NIL

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts A1K, U1A, K4U & A1S.

5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- NIL.

5 (I) 330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- cct B1T

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts J2H & S5B.

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

6 WEATHER REPORT:- Rainfall recorded at Abuja

7 INTERNATIONAL LINES:-

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

Maximum load - 261MW at 21:00Hrs.
Minimum load - 194MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 101MW at 24:00Hrs.
Minimum load - 67MW at 08:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 36.0MW at 22:00Hrs.
Minimum load - 23.7MW at 10:00Hrs.

8 MISCELLANEOUS:-

- 00:15 - 19:39Hrs, Delta GT19 was shut down on frequency management. Load loss = 78MW
- 00:24Hrs, Olorunsogo Gas reduced generation by 20MW. Frequency was 50.80Hz
- 00:25Hrs, Sapele NIPP GT1 was shut down on frequency management. Load loss = 60.7MW
- 00:27Hrs, Geregu Gas GT12 was shut down on frequency management. Load loss = 115MW
- 01:32Hrs, Shiroro P/S reduced generation by 100MW. Frequency was 50.65Hz
- 03:11Hrs, Omoku P/S reduced generation by 20MW. Frequency was 50.66Hz
- 08:09 - 17:33Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 73MW
- 08:12 - 16:58Hrs, Shiroro 411G4 was shut down on frequency management. Load loss = 150MW
- 08:27Hrs, Rivers IPP GT1 was tied. The unit was out due to gas constraint.
- 13:45Hrs, Jebba 2G3 was tied. The unit was out on frequency management.
- 14:02Hrs, Ijebu-Ode T/S 60MVA 132/33kV transformer T3 was restored. The transformer was out on fault.
- 14:28Hrs, Olorunsogo NIPP GT1 was tied. The unit was out on frequency management.

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	33
OPTIC FIBRE	13	10
PLS	14	2

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	11	8
132kV	102	82	20

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 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:

- 1 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

- 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.

- 16:56Hrs, Benin/Irrua 132kV line was restored. The line was out on maintenance.
- 17:38Hrs, Mando T/S 150MVA 330/132/33kV transformer T1A was restored. The transformer was out on fault.
- 19:12Hrs, Jebba 2G4 was tied. The unit was out on frequency management.
- 19:34Hrs, Geregu GT11 was tied. The unit was out on maintenance.
- 19:42Hrs, Azura Edo GT11 was tied. The unit was out on frequency management.
- 20:00Hrs, Alaoji NIPP GT2 was tied. The unit was out on frequency management.
- 20:40Hrs, Gbarain NIPP GT2 was tied. The unit was out on frequency management.
- 23:02Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 70MW.
- 23:26Hrs, Delta GT19 was shut down on frequency management. Load loss = 85MW.

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

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

12(D) **UNAVAILABLE CAPACITOR BANK:**

- 1 (i) Ogba T.S, (ii) Maiduguri T/S, (iii) Isolo T/S, (iv) Ado-Ekiti T/S, (v) Ilorin T/S, (vi) Akure T/S.

12(E) **UNAVAILABLE SKYWIRES**

LAGOS REGION

- 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

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

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- 1 Benin, Ikeja West, Onitsha, Egbin, Uguwaji, 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

