

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SATURDAY 04/08/2018

FOR: EVENTS OF FRIDAY 03/08/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	21:00	03/08/2018
GENERATION CAPABILITY	7968.5	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4989.3	-do-	-do-
PEAK GENERATION	4705.2	-do-	-do-
LOWEST GENERATION	2804.3	04:00	03/08/2018
8-HOURLY DURATION PEAK	3401.8	0100-0800	-do-
	3422.4	0900-1600	-do-
	4705.2	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	350	Bimin-Kebbi & Jos T/S	02:00 & 23:00
LOWEST VOLTAGE FOR THE DAY	276	Jos T/S	19:05

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.89	03:08
LOWEST FREQUENCY	49.67	19:19

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th July, 2018	No. of days since last total collapse: 17
Date of last partial collapse: 12 th April, 2018	No. of days since last partial collapse: 109
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	1	4	22
	Partial	1	--	--	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	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	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	2	1	4
2015	Total	1	0	1	0	2	0	1	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	2	2	22
	Partial	--	--	1	0	1	3	1	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	307	253		
2 JEBBA	HYDRO	407	173		
3 SHIRORO	HYDRO	594	211		
4 EGBIN ST2 - 5	STEAM	620	445		
5 SAPELE	STEAM	50	50		
6 DELTA	GAS	502	220		
7 AFAM IV-V	GAS	54	50		
8 GEREGU GAS	GAS	266	90		
9 OMOTOSHO GAS	GAS	137.6	121.9		
10 OLORUNSOGO GAS	GAS	131.1	132.1		
11 GEREGU NIPP	GAS	126	105		
12 SAPELE NIPP	GAS	181.3	77.1		
13 ALAQJI NIPP	GAS	0	0		
14 OLORUNSOGO NIPP	GAS	0	0		
15 OMOTOSHO NIPP	GAS	102.5	71.9		
16 ODUKPANI NIPP	GAS	0	0		
17 IHOVBOR NIPP	GAS	94.6	82.4		
18 OKPAI	GAS	315	249		
19 AFAM VI	GAS	125	102		
20 IBOM POWER	GAS	107.4	80.8		
21 ASCO	GAS	0	0		
22 A.E.S	GAS	0	0		
23 OMOKU	GAS	55.2	20.9		
24 TRANS AMADI	GAS	66.3	31.4		
25 RIVERS IPP	(GAS)	0	20		
26 AZURA - EDO IPP	(GAS)	393	150		
27 EGBIN ST6	(GAS)	0	0		
28 PARAS ENERGY	(GAS)	70.2	67.8		
29 GBARAIN NIPP	GAS	0	0		
TOTAL		4705.2	2804.3		
1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	6868.00	286.17	6852.00	285.50
2 JEBBA	HYDRO	6267.00	261.13	6245.24	260.22
3 SHIRORO	HYDRO	10160.00	423.33	10140.36	422.52
4 EGBIN ST2 - 5	STEAM	11450.00	477.08	10721.60	446.73
5 SAPELE	STEAM	1231.90	51.33	1118.80	46.62
6 DELTA	GAS	10365.44	431.89	10256.90	427.37
7 AFAM IV-V	GAS	1294.00	53.92	1288.42	53.68
8 GEREGU GAS	GAS	3175.50	132.31	3152.04	131.34
9 OMOTOSHO GAS	GAS	2958.00	123.25	2934.70	122.28
10 OLORUNSOGO GAS	GAS	3146.81	131.12	3119.44	129.98
11 GEREGU NIPP	GAS	2775.25	115.64	2761.80	115.08
12 SAPELE NIPP	GAS	2279.74	94.99	2261.89	94.25
13 ALAQJI NIPP	GAS	9.88	0.41	5.38	0.22
14 OLORUNSOGO NIPP	GAS	227.90	9.50	180.20	7.51
15 OMOTOSHO NIPP	GAS	2202.70	91.78	2180.80	90.87
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2248.12	93.67	2230.71	92.95
18 OKPAI	GAS	6635.00	276.46	6462.10	269.25
19 AFAM VI	GAS	2787.47	116.14	2715.06	113.13
20 IBOM	GAS	1959.89	81.66	1951.00	81.29
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	5531.45	230.48	5516.60	229.86
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1335.30	55.64	1305.12	54.38
25 TRANS AMADI	GAS	1264.40	52.68	1238.70	51.61
26 RIVERS IPP	GAS	297.20	12.38	292.27	12.18
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1651.20	68.80	1647.00	68.63
29 GBARAIN NIPP	GAS	120.50	5.02	112.50	4.69
TOTAL		88,242.65	3,676.78	86,690.63	3,612.11

1.7A GENERATION POSITION AT 06:00HRS OF SATURDAY 04/08/2018

	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 50.55Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	221	221	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 due to low gross operating head.
	JEBBA HYDRO	6	2G1 - 5 5	475	450	2G1, 3 & 5 3	241	241	2G2 & 4 - 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	317	411G1 - 3 - Generation reduced on frequency management
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	620	ST1, 2, 4 & 5 4	620	508	ST3 - Out on high vibration since 19th June 2017. Generation reduced on frequency management
	SAPELE (STEAM)	6	ST2 1	120	51	ST2 1	51	51	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	390	390	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	GT18 1	54	54	GT1 - 12 - De-commissioned and scrapped. GT13 -16 - Out on blade failure. GT17 - Out due to technical issues. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT12 & 13 2	290	290	GT13 1	145	117	GT11 - Shut down due to gas leakage. GT12 - Out on frequency management. GT13 - Generation reduced on frequency management.
	OMOTOSHO GAS	8	GT1 - 4, 6, 7 & 8 7	294	266	GT1, 6, 7 & 8 4	152	111.5	GT2, 3 & 4 - Out due to gas constraint. GT5 - Out on generator transformer trip. Generation reduced on frequency management.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 4, 5 & 8 4	152	120.4	GT2, 3 & 7 - Out due to gas constraint. GT6 - Out on frequency management. Generation reduced on frequency management.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT23 1	145	105	GT21 - Out on maintenance. GT22 - Out due to gas constraint. GT23 - Generation reduced on frequency management.
	SAPELE NIPP	4	GT1, 3 & 4 3	337.5	337.5	GT3 1	112.5	55.2	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	0 0	0	0	GT1 - Out on frequency management. GT2 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	0 0	0	0	GT1 & 3 - Out due to gas constraint. GT2 - Out on frequency management. 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	88.6	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	74.6	74.6	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	0 0	0	0	GT2 - Out on frequency management.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	427	GT11, 12 & ST18 3	427	266	GT11, 12 & ST18 - Generation reduced on frequency management.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT12 & 13 2	307	250	GT11 - Out on frequency management.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	104	GT11, 12 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	72.1	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 3	75	60	GT1, 2 & 5 3	60	31	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 Out on maintenance. Generation reduced on frequency management.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1, 2 & 4 3	52.8	52.8	GT3 - Out on fault. Available unit on bar.
	RIVERS	1	GT1 1	180	160	0 0	0	0	GT1 - Out due to gas constraint.
	SUB TOTAL	131	83	8461	7888	51	4189.9	3230.2	Frequency = 50.55Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SATURDAY 04/08/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	0	0	0	0	0	0	ST6 - Shut down on Egbin management decision.
		0						
PARAS ENERGY	8	GT2 - 9	68.6	68.6	GT2 - 9	68.6	68.6	Available units on bar.
		8			8			
SUB TOTAL	9	8	68.6	68.6	8	68.6	68.6	
GRAND TOTAL	140	91	8529.6	7956.6	59	4,258.50	3,298.80	Frequency = 50.55Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - FRIDAY 03/08/2018.							
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	1	08:00		24		NIL
	PTCEXPRESS	8	21:00		24		NIL
	SANKYO	ON	01:00		24		NIL
	FEEDER 8	8	22:00		24		NIL
IKORODU	PULK IT	4	15:00		24		NIL
	INDUSTRIAL	9	09:00		24		NIL
	SPINTEX	12	02:00		24		NIL
	DANGOTE	2	01:00		24		NIL
ALAUUSA	LAND CRAFT	17	06:00		24		NIL
	TR4 15MVA	5.5	18:00		24		NIL
	TR5 -15MVA	5.6	16:00		24		TRIPPED ON E/F, T2 60MVA 132/33KV TRIP ON O/C AND STANDBY E/F
M/LAND	ALAUUSA	15.2	18:00		24		URGENT OUTAGE ON T3 60MVA AND ALAUUSA 33KV FEEDER
	PTC (MARYLAND)	15	21:00		9		NIL
	TOTAL LOAD	102.3					

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB OF FRIDAY 03/08/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	70.2	07:00	67.0	05:00	24	1646.4	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: FRIDAY 03/08/2018

COMPANY NAME	VOL-TAGE LEVEL	CON-TRACTUAL 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	1.2	16:00	0.2	24:00	24	10.3	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	6.9	17:00	2.1	24:00	24	131.1	NIL
KAM INTEGRATED	33kV feeder	15.0	5.1	14:00	1.7	01:00	24	73.4	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		15.0	5.1	13:00	1.7	01:00	24	76.0	SUPPLY NOT INTERRUPTED
LORDSMITH		3.0	1.0	11:00	0.4	08:00	24	16.4	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: SATURDAY 04/08/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.38	101.48	370.19
TAIL WATER ELEVATION (METERS)	103.54	73.80	271.00
GROSS OPERATING HEAD (METERS)	29.84	27.68	99.19
AVERAGE TURBINE DISCHARGE (M3/SEC)	1021.00	1119.00	488.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1021.00	1119.00	488.00
COMPUTED INFLOW (M3/SEC)	2021.00	1408.00	685.00
STORAGE DIFFERENTIAL	1000.00	289	197.00
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 FRIDAY 03/08/2018

	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	536.2	21:00	506.48	277.9	05:00
EKO	391.1	07:00	565.33	326.7	18:00
IKEJA	572.9	22:00	844.54	362.3	13:00

2.0 GAS POSITION: SATURDAY 04/08/2018

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	508	1100	540	540	560
DELTA (GAS)	390	915	390	390	525
OMOTOSHO GAS	111.5	336.8	152	152	184.8
OMOTOSHO NIPP	88.6	500	120	120	380
OLORUNSOGO (GAS)	120.4	336	152	152	184
OLORUNSOGO NIPP	0	750	0	0	750
SAPELE NIPP	55.2	500	112.5	112.5	387.5
SAPELE STEAM	51	720	51	51	669
AFAM IV-V	54	300	54	54	246
AFAM VI	104	650	150	150	500
GEREGU GAS	117	435	145	145	290
GEREGU NIPP	105	435	145	145	290
OKPAT (GAS/STEAM)	266	480	427	427	53
ALAOJI NIPP	0	504	0	0	504
IHOVBOR NIPP	74.6	450	74.6	74.6	375.4
IBOM	72.1	198	115	115	83
ODUKPANI NIPP	0	625	0	0	625
TOTAL	2117.4	9234.80		2628.1	6606.7

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : FRIDAY 03/08/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SATURDAY 04/08/2018 = 0MW. FREQUENCY 50.55Hz.

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	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Saturday 04/08/2018 as at 0600Hrs was = 4017.1MW.

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 GT2 & 4	240	0	240	1628
2	Omotosho NIPP GT1	120	0	120	
3	Geregu NIPP GT22	145	0	145	
4	Omotosho Gas GT2, 3 & 4	114	0	114	
5	Olorunsogo NIPP GT1 & 3	240	0	240	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Olorunsogo Gas GT2, 3 & 7	114	0	114	
8	Afam VI GT11, 12 & ST10	490	0	490	
9	Rivers IPP GT1	160	25	135	
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom GT2	115	72.1	42.9	42.9
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Geregu Gas GT12 & 13	290	117	173	1921.6
2	Azura Edo GT11	154	250	-96	
3	Shiroro 411GT1- 3	450	167	283	
4	Okpa GT11, 12 & ST18	427	266	161	
5	Delta GT16 & 19	180	0	180	
6	Olorunsogo NIPP GT2	120	0	120	
7	Omotosho NIPP GT4	120	0	120	
8	Egbin ST1, 2, 4 & 5	620	508	112	
9	Olorunsogo gas GT1, 4, 5, 6 & 8	190	120.4	69.6	
10	Ihovbor NIPP GT1	112.5	0	112.5	
11	Jebba 2G2 & 4	160	0	160	
12	Sapele NIPP GT1 & 4	225	0	225	
13	Geregu NIPP GT23	145	105	40	
14	Omoku GT1, 2 & 5	60	31	29	
15	Alaoji NIPP GT1	120	0	120	
16	Gbarain NIPP GT2	112.5	0	112.5	
17	Omotosho Gas GT1 & 6 - 8	152	111.5	40.5	
4.1 DUE TO WATER MANAGEMENT:					
Grand Total					
					3833

5.0 **OUTAGES:**

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

5(B) **FORCED OUTAGES (TRANSMISSION):**

- 1 04:50 – 05:31Hrs, Aba T/S 30MVA 132/33kV Mobitra primary & secondary CBs tripped on SBEF relay. LHR =6.5MW
- 2 05:54 – 06:29Hrs, Ihovbor/Benin 330kV line (cct V7B) CB tripped at both ends on the following relay indications:
At Ihovbor T/S: Micom Relay: Distance protection, general trip zone 1, starting Phase to ground, fault location = 36.4km, standby I>>C, master trip relay MVAJ operated.
At Benin T/S: ABB Relay: Trip-trip, trip-TRL3, PHS-STFW (L3PE), ZMI – trip, EFC-CS, AR – IN Progress, DEF – Block, fused – VTSZ, ZM2, 3 – start, ZCIP – CS L3, TOC-STL3, HS-TRL3, fault loop = L3 – N, Distance = 6.5km, MVAJ – K86C. No load loss as ccts H7V,M5W, B5M & H1W were in service.
- 3 12:09 – 12:31Hrs, Benin/Asaba 330kV line (cct B3D) CB tripped at Asaba T/S on SEL relay: Blue phase and E/F, zone 1. No load loss as ccts D3T & B2T were in service
- 4 12:25 - 13:39Hrs, Ajaokuta/Okene/Ukpella/Irrua 132kV line CB tripped at Ajaokuta T/S on distance protection, B-N zone 3. LHR = 36MW.
- 5 13:00 – 13:22Hrs, Benin T/S 2X150MVA 330/132/33kV transformers 6T1 & 6T2 sec CBs tripped on O/C 3 phases. LHR =28MW each
- 6 14:48 - 15:15Hrs, Ikot-Ekpene/ Ugwuaji 330kV line 3 (cct K3U) CBs tripped at both ends on the following relay indications:
At Ikot-Ekpene T/S: SEL relay: Main protection zone 1, Blue phase – ground .
At Ugwuaji T/S: ABB relay: Distance O/C & E/F. No load loss as ccts A2K, HIU & H2U were in service.

5 (C) **PLANNED OUTAGES:-**

- 1 10:50 – 18:40Hrs, Afam 1, 132kV main bus was taken out to carry out annual preventive maintenance on main bus isolators T7 & T8. No load interruption as reserve bus was in service.

5(D) **URGENT OUTAGES:-**

- 1 11:50 through 24:00Hrs, Rivers IPP GT1 was shut down due to low gas pressure. Load loss = 30MW
- 2 15:42 through 24:00Hrs, Geregu Gas GT11 was shut down due to gas leakage. Load loss = 110MW.

9 **GENERATOR MERIT ORDER BASED ON SYSTEM RESPONSE AND GRID RELIABILITY**

GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .

GROUP 2A - UNITS FROM ODUKPANI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSOGO POWER PLC AND OMOTOSHO POWER PLC.

GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.

GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.

GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED FOR THE ANCILLARY SERVICE).

GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).

GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

10 **COMMUNICATION MEDIA**

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

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, 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 Jebba, Shiroro, Ikeja-West, Kano,

7 **INTERNATIONAL LINES:-**

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

Maximum load - 268MW at 20:00Hrs.

Minimum load - 201MW at 07:00Hrs.

B **BIRNIN KEBBI/NAMEY 132KV LINE**

Maximum load - 173MW at 12:00Hrs.

Minimum load - 70MW at 09:00Hrs.

C **KATSINA/GAZAOUA/MARADI 132KV LINE**

Maximum load - 33.4MW at 21:00Hrs.

Minimum load - 18.0MW at 05:00Hrs.

8 **MISCELLANEOUS:-**

1 00:05- 19:05Hrs, Delta GT18 was shut down on frequency management. Load loss = 65MW.

2 00:12Hrs, Alaoji NIPP GT2 was shut down on frequency management. Load loss = 80MW.

3 01:27Hrs, Gbarain NIPP GT2 was shut down on frequency management. Load loss = 62.2MW.

4 02:17 - 14:37Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 55MW

5 02:34Hrs, Olorunsogo NIPP GT2 was shut down on frequency management. Load loss = 69.9MW.

6 02:38Hrs, Omoku GTs 1 & 5 were shut down on frequency management.

Load loss = 18.8MW & 12.5MW respectively.

05:54Hrs – GT5 was tied & 06:54Hrs - GT1 was tied.

7 15:26Hrs, Geregu Gas GT12 was tied. The unit was out on frequency management.

8 15:30 – 18:53Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 55MW.

9 16:11Hrs, Benin/Oghara 132kV line was restored. The line was out on fault.

10 19:04Hrs, Jebba 2G3 was tied. The unit was out on frequency management.

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.

- 19:05Hrs, Jos T/S 75MX 330kV Reactor R1 was switched off on voltage control. Voltage profile: 276/320kV
- 19:17Hrs, Delta GT19 was tied. The unit was out on frequency management
- 19:26Hrs, Geregu Gas GT13 was tied. The unit was out on frequency management
- 19:46Hrs, Sapele NIPP GT1 was tied. The unit was out on frequency management
- 23:19Hrs, Jebba 2G4 was shut down on frequency management. Load loss = 66MW.
- 23:23Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 50MW.

**** **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 Berin, Ikeja West, Onitsha, Egbin, Ugwuaji, Jos, Gwagwalada & Alaaji 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

