

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF TUESDAY 06/02/2018

FOR: EVENTS OF MONDAY 05/02/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	21,390	22:00	05/02/2018
GENERATION CAPABILITY	7943.2	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5707.2	-do-	-do-
PEAK GENERATION	4750.0	-do-	-do-
LOWEST GENERATION	3849.6	08:00	05/02/2018
8-HOURLY DURATION PEAK	4454.4	0000-0800	-do-
	4281.5	0900-1600	-do-
	4750	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	Omotosho T/S	07:00
LOWEST VOLTAGE FOR THE DAY	297	Sakate T/S	19:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.49	07:59
LOWEST FREQUENCY	49.92	21:13

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 05												
Date of last partial collapse: 17th Oct., 2017		No. of days since last partial collapse: 108												
Highest No of days ever attained in-between total collapses:		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	--	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	4	2	22	
	Partial	--	--	--	--	--	--	--	2	--	--	--	2	
2014	Total	2	--	--	2	0	3	1	0	0	1	0	9	
	Partial	--	0	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	1	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	0	15	
	Partial	1	0	1	0	0	0	1	0	3	3	--	9	
2018	Total	5	1	--	--	--	--	--	--	--	--	--	6	
	Partial	--	--	--	--	--	--	--	--	--	--	--	0	

1.5 BREAKDOWN OF PEAK & OFF PEAK GENERATION (NATIONAL PEAK & OFF PEAK)

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)
1 KAINJI	HYDRO	422	331
2 JEBBA	HYDRO	365	231
3 SHIRORO	HYDRO	190	190
4 EGBIN ST2 - 5	STEAM	425	378
5 SAPELE	STEAM	0	0
6 DELTA	GAS	613	549
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	280	210
9 OMOTOSHO GAS	GAS	133.8	139.2
10 OLORUNSOGO GAS	GAS	161.4	165.4
11 GEREGU NIPP	GAS	213	185
12 SAPELE NIPP	GAS	217.2	158.6
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	165.6	176.5
15 OMOTOSHO NIPP	GAS	216	166.3
16 ODUK PANI NIPP	GAS	430.5	254.3
17 IHVOBOR NIPP	GAS	0	0
18 OKPAI	GAS	213	101
19 AFAM VI	GAS	0	0
20 IBOM POWER	GAS	82.1	78.2
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	57.2	50.8
24 TRANS AMADI	GAS	43.3	13.5
25 RIVERS IPP	(GAS)	156	145
26 AZURA - EDO IPP	(GAS)	0	160
27 EGBIN ST6	(GAS)	189	68.6
28 PARAS ENERGY	(GAS)	69.4	0
29 GBARAIN NIPP	GAS	107.5	92.2
TOTAL		4750.0	3849.6

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9248.00	385.33	9229.60	384.57
2 JEBBA	HYDRO	7013.00	292.21	6994.32	291.43
3 SHIRORO	HYDRO	4575.00	190.63	4548.95	189.54
4 EGBIN ST2 - 5	STEAM	9565.00	398.54	9029.90	376.25
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	13663.34	569.31	13372.50	557.19
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	5871.40	244.64	5843.22	243.47
9 OMOTOSHO GAS	GAS	3222.00	134.25	3197.20	133.22
10 OLORUNSOGO GAS	GAS	3828.44	159.52	3798.86	158.29
11 GEREGU NIPP	GAS	4732.88	197.20	4714.52	196.44
12 SAPELE NIPP	GAS	4608.90	192.04	4588.40	191.18
13 AZURA - EDO IPP	GAS	0.00	0.00	0.00	0.00
14 ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
15 OLORUNSOGO NIPP	GAS	4273.40	178.06	4220.00	175.83
16 OMOTOSHO NIPP	GAS	4698.20	195.76	4665.10	194.38
17 ODUK PANI NIPP	GAS	6986.81	291.12	6947.31	289.47
18 IHVOBOR NIPP	GAS	0.00	0.00	0.00	0.00
19 OKPAI	GAS	3852.00	160.50	3736.60	155.69
20 AFAM VI	GAS	0.00	0.00	0.00	0.00
21 IBOM	GAS	1656.46	69.02	1647.00	68.63
22 ASCO	GAS	0.00	0.00	0.00	0.00
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1349.10	56.21	1320.78	55.03
25 TRANS AMADI	GAS	652.00	27.17	639.20	26.63
26 RIVERS IPP	GAS	3621.90	150.91	3616.72	150.70
27 EGBIN ST6	STEAM	4159.00	173.29	3959.80	164.99
28 PARAS ENERGY	GAS	1866.30	69.43	1861.20	69.22
29 GBARAIN NIPP	GAS	1940.13	80.84	1924.93	80.21
TOTAL		101,183.26	4,215.97	99,656.11	4,152.34

1.7A GENERATION POSITION AT 06:00HRS OF TUESDAY 06/02/2018

	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	7	1G5, 6,11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	379	1G7 - Out on stator winding failure. 1G8 - Out due to loss of supply to the auxiliary. 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.
	JEBBA HYDRO	6	2G1, 2, 4 & 5 4	380	380	2G1, 2, 4 & 5 4	380	354	2G3 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	580	580	411G1 & 2 2	290	194	411G1 - Generation reduced on frequency management. 411G3 & 4 - Out on water management.
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	880	ST1, 2 & 4 3	660	392	ST1 - Under observation after maintenance work on the unit transformer. ST3 - Tripped on high vibration. ST5 - Out due to low gas pressure.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Tripped on low drum level. ST2 - Out on maintenance. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT4, 7, 9 - 13, 15, 16, 18 - 20 12	655	655	GT4, 7, 9 - 13, 15, 16, 18 - 20 12	655	601	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. GT17 - Out on excitation trouble.
	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. GT19 & 20 - Awaiting major overhaul. GT17 - Out due to technical issue with generator auxiliary. GT18 - Tripped on load angle limitation.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	286	GT11 - 13 - Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 3, 4 & 6 4	152	138.7	GT2, 5, 7 & 8 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 2, 4, 5 & 8 5	190	164.4	GT3, 6 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT22 & 23 2	290	201	GT21 - Out on maintenance. GT22 - Generation reduced due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	230	230	GT1 & 3 2	230	190	GT2 - Out due to high air inlet differential pressure. GT4 - Tripped on fire protection alarm.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Tripped due to low gas pressure. GT3 - Shut down due to generator air inlet filter trouble.
	OLORUNSOGO NIPP	6	GT1 - 3 3	360	360	GT1 & 2 2	240	155.3	GT1 & 2 - Generation reduced due to low gas pressure. GT3 - Out due to gas constraint. GT4 - Out of production since 25/10/2016. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	250	240	GT2 & 4 2	240	213.7	GT1 - Out due to gas constraint. GT2 & 4 - On frequency response. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT1 - 4 4	480	460	GT1 - 4 4	460	371.8	GT2 - Generation reduced due to high air inlet differential pressure. GT5 - Out on maintenance.
	IHOVBOR NIPP	4	GT1 & 2 2	225	225	0 0	0	0	GT1 & 2 - Out due to gas constraint. GT3 - Out due to gas inlet valve problem. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	99.9	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT11,12 & ST18 3	375	375	GT11,12 & ST18 3	270	244	GT11 & 12 - Generation reduced due to high air inlet differential pressure.
	AZURA - EDO	0	0 0	0	0	0 0	0	0	GT11 - Undergoing commissioning tests. GT12 & 13 - Awaiting commissioning.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	650	0 0	0	0	GT11 - 13 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	75.9	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	0	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT2, 5 & 6 3	75	60	GT2, 5 & 6 3	60	58.9	GT1 - Out due to excitation problem. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	TRANS-AMADI	4	GT1 & 2 2	50	43.3	GT1 & 2 2	43.3	43.3	GT3 - Out on fault. GT4 - Out on maintenance.
	RIVERS	1	GT1 1	180	160	GT1 1	160	150	Available unit on bar.
	SUB TOTAL	125	81	7809.5	7658.8	60	5422.8	4312.9	Frequency = 50.23Hz.

1.7B GENERATION POSITION AT 06:00HRS OF TUESDAY 06/02/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	ST6		ST6		220	170	REMARK
		1	220	220	1			
EGBIN	1	1	220	220	1	220	170	Available unit on bar.
PARAS ENERGY	8	GT2 - 9	69.4	69.4	GT2 - 9	69.4	69.4	Available units on bar.
		8			8			
SUB TOTAL		9	289.4	289.4	9	289.4	239.4	
GRAND TOTAL		134	8098.9	7948.2	69	5,712.20	4,552.30	Frequency = 50.23Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - MONDAY 05/02/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	1	0800HRS	24	NIL
	PTCEXPRESS	11	0900HRS	24	NIL
	SANKYO	ON	0100HRS	18	TRIPPED ON E/F, INST O/C
	FEEDER 8	15	0600HRS	24	NIL
IKORODU	PULK IT	4	0800HRS	24	NIL
	INDUSTRIAL	21	2300HRS	24	NIL
	SPINTEX	4	2000HRS	24	NIL
	DANGOTE	3	0100HRS	24	NIL
	LAND CRAFT	43	1800HRS	24	NIL
ALAUJA	TR4 15MVA	9.2	1500HRS	24	NIL
	TR5 -15MVA	7.4	1300HRS	24	NIL
	ALAUJA	16.1	1500HRS	23	PLANNED OUTAGE
MILAND	PTC (MARYLAND)	19	0800HRS	24	NIL
TOTAL LOAD		153.7			

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Saketete 330KV line	71	24	24	Nil.

1.8 HYDROLOGICAL DATA: TUESDAY 06/02/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.12	102.12	372.10
TAIL WATER ELEVATION (METERS)	104.12	74.00	270.40
GROSS OPERATING HEAD (METERS)	37.00	28.12	101.70
AVERAGE TURBINE DISCHARGE (M3/SEC)	1151.00	1136.00	218.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1151	1136	218
COMPUTED INFLOW (M3/SEC)	717.00	1182.00	10.00
STORAGE DIFFERENTIAL	-434.00	46	-208
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 05/02/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	502.70	23:00	503.58	305.2	07:00
EKO	504.1	14:00	581.69	266.9	17:00
IKEJA	579.2	20:00	656.85	435.1	01:00

2.0 GAS POSITION: TUESDAY 06/02/2018

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	406	1100		880	220
DELTA (GAS)	612	915		665	260
OMOTOSHO GAS	141.2	336.8		162	184.8
OMOTOSHO NIPP	197.7	500		240	260
OLORUNSOGO (GAS)	171.2	336		190	146
OLORUNSOGO NIPP	140.4	750		240	510
SAPLE NIPP	184	500		230	270
SAPLE STEAM	0	720		0	720
AFAM IV-V	0	300		0	300
AFAM VI	0	650		0	650
GEREGU GAS	240	435		435	0
GEREGU NIPP	210	435		290	145
ODUKPANI (GAS/STEAM)	145	480		150	330
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	85.7	450		112.5	337.5
IBOM	75.8	198		115	83
ODUKPANI NIPP	272.4	625		345	280
TOTAL	2882.4	9236.22		4034.5	5200.3

1 MMSCF IS EQUIVALENT TO 3.79MW

3.0 SPINNING RESERVE FOR : MONDAY 05/02/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF TUESDAY 06/02/2018 = 0MW. FREQUENCY 50.23Hz.

S/N	POWER STATION	UNIT ON SPINNING RESERVE	CONTRACTED RESERVE	ACTUAL RESERVE (MW)	TOTAL (MW)
1	Egbin	ST2	100	0	0
		ST4		0	
		ST6		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 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Tuesday 06/02/2018 as at 0600Hrs was = 2683.8MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNUTILIZED GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Omotosho GT1	120	0	120	2259.7
2	IhoVbor GT1 & 2	225	0	225	
3	Alaoji NIPP GT1, 2 & 4	360	0	360	
4	Olorunsogo Gas GT3, 6 & 7	114	0	114	
5	Olorunsogo NIPP GT1 - 3	360	155.3	204.7	
6	Omotosho Gas GT2, 5, 7 & 8	152	0	152	
7	Atam VI GT11 - 13 & ST10	650	0	650	
8	Egbin ST5	220	0	220	
9	Geregu NIPP GT22	145	80	65	
10	Geregu Gas GT11 - 13	435	286	149	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1386.7MMSCF OF GAS (EQUIVALENT TO \$200.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom Power GT3	115	75.9	39.1	39.1
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Shiroro 411GT1	145	50	95	95
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
4.4 DUE TO WATER MANAGEMENT					
1	Shiroro 411G3 & 4	290	0	290	290
Total					2683.8

5.0 **OUTAGES:**

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

- 1 04:05 - 18:41Hrs, Jebba 2G1 tripped on governor head pump failure. LHR = 80MW.
- 2 12:42 – 13:58Hrs, Gbarain P/S GT2 tripped on reverse power due to opening of Gbarain line at Gbarain T/S as a result of fire outbreak. LHR = 101MW.
- 3 12:52 – 14:42Hrs, Trans -Amadi GT1 was placed on FSNL to enable maintenance crew work on GT2 CB . Load loss =20MW.
- 4 14:02 – 15:58Hrs, Ibom GT3 went on Island operation feeding Eket & Uyo due to the tripping of Aba/Itu 132kV line. Load reduced from 80MW to 30MW.

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

- 1 05:46 – 06:05Hrs, Olorunsogo/Ikeja West 330kV line (cct R1W) CBs tripped at both ends on the following relay indications:
At Olorunsogo T/S: Nari relay – ZM1 –OP, ABC, period = 00.32ms, fault location – Phase B = 27.6km.
At Ikeja West T/S: Siprotec relay – General trip, Phase fault zone 1, trip 5X –B, PU IP Phase B, PU time = 55ms, trip time = 1ms, distance = 12.5km. No load loss as ccts R2A & H2A were in service.
- 2 14:02 – 14:50Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on E/F. LHR = 50MW.
- 3 15:05 – 15:16Hrs, Birnin-Kebbi T/S 150MVA 330/132kV transformer primary & secondary CBs tripped on O/V. LHR = 106MW
- 4 19:01 – 19:23Hrs, Alaoji/Owerri 132kV line 1 CB tripped at both ends on the following relay indications:
At Alaoji T/S: Optimho distance protection Z1, A- B, location = 1538.98km, period = 219.5ms.
At Owerri T/S: Directional E/F. No load loss as line 2 was in service.
 19:12Hrs, Trial restoration at Alaoji failed on Optimho distance protection relay Z1, AB –N, location = 87km, period = 62ms.
 Siemens relay: Trip, instantaneous trip 1>>, instantaneous trip 1E >>, Red & Yellow Phases .
- 5 19:12 – 19:23Hrs, Alaoji/Owerri 132kV line 2 CB tripped at Alaoji T/S on Siemens relay – instantaneous trip >> and back up trip. LHR = 78MW.
- 6 19:12 – 21:22Hrs, Gbarain NIPP GT2 tripped on reverse power due to the tripping of Alaoji/Owerri 132kV line 2. LHR = 92.8MW.
- 7 21:35 through 24:00Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom relay 1 > 1/2 L1, 2 & 3. LHR = 60MW.

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

- 1 14:05 – 16:30Hrs, Ikorodu T/S 60MVA 132/33kV transformer T1 was taken out for maintenance crew to replace burnt secondary conductor on the transformer. Load loss = 35MW.

5(D) **URGENT OUTAGES:**

- 1 08:55Hrs, Odukpani NIPP GT2 was shut down due to high air inlet differential pressure. No load loss as 84.9MW was transferred to GT1.
- 2 15:11 – 16:25Hrs, Egbin/Ikorodu 132kV line 6 was taken out to seal point of oil leakage on the Blue Phase CT at IKorodu T/S. No load loss as line 5 was in service.

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

GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .
 GROUP 2 - OTHER 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 CONTACTED 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.
 GROUP 7 - ALL OTHER PLANTS.

11 (A) **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	33
OPTIC FIBRE	13	10
PLS	14	5

5 (E) **EMERGENCY OUTAGES:- NIL**

5 (F) **AUTOMATIC UNDER FREQUENCY OPERATION:- NIL**

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

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** cct N4J (on soak at Egbin T/S)

5 (I) **330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- Nil.**

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** cct S5B.

6 **WEATHER REPORT:- NIL**

7 **INTERNATIONAL LINES:-**

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

Maximum load - 250MW at 21:00Hrs.
 Minimum load - 191MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEFY 132KV LINE

Maximum load - 94MW at 15:00Hrs.
 Minimum load - 58MW at 05:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 49.0MW at 09:00Hrs.
 Minimum load - 16.0MW at 04:00Hrs.

8 **MISCELLANEOUS:-**

- 1 08:55Hrs, Odukpani NIPP GT1 was tied to swap with GT2. The unit was out due to high air inlet differential pressure.
- 2 10:23Hrs, Okpai P/S GT11 was tied. The unit was out due to poor gas quality.
- 3 12:06Hrs, Shiroro 411G2 reduced generation by 100MW on frequency management. Frequency = 50.43Hz.
- 4 12:41Hrs, Shiroro 411G2 increased generation by 100MW on frequency management. Frequency = 50.18Hz.
- 5 14:39Hrs, Trans-Amadi P/S GT2 was tied. The unit was out due to low gas pressure.
- 6 16:05Hrs, Omotosho NIPP GT4 was tied to swap with GT1.
- 7 16:13Hrs, Omotosho NIPP GT1 was shut down. Load of 83MW was transferred to GT1.
- 8 16:48Hrs, Ikeja West T/S 150MVA 330/132/33kV transformers T1A & T1B and T2A & T2B primary CB were restored after the Red and Yellow Phase resistors were changed and defective closing contact on the protection panel was replaced.
- 9 17:21Hrs, Okpai GT18 was tied. The unit was out due to poor gas quality.

11 (B) **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	7	12
132kV	102	82	20

12(A) **UNAVAILABLE TRANSFORMERS/REACTORS:**

SHIRORO REGION:

- 1 Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.
- 2 Birnin Kebbi 75MX Reactor R1.

KADUNA REGION:

- 1 Kumbotso 150MVA 330/132/33kV transformer T1A - Burnt control cables.

10 20:38Hrs, Jebba/Osogbo 330kV line 2 (cct J2H) was restored on voltage control. At Osogbo T/S. V/P: 320/326kV.

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

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

12(D) **LAGOS REGION**

- 1 Agbara/Ojo 132kV line 1 on soak from Agbara end.

SHIRORO REGION:- Nil

12(E) **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.

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)
- 2 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- 3 Otta/Ogba 132kV line isolator - defective control shaft.
- 4 Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole
- 5 Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- 6 Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- 7 Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.

OSOGBO REGION:

- 1 Omotosho 330kV T/S, 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.
- 2 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.
- 3 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.
- 4 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 NIL

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

12 (F) LINES WITH MISSING SKY WIRE

LAGOS REGION

- 1 Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- 2 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 3 330kV Ikeja West/Osogbo line. - 95 spans.
- 4 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 5 Ikeja West/Akangba 330kV line 2 - 1 span.
- 6 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 7 Akangba/Itire 132kV lines 1 & 2 - 1 span.
- 8 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 9 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
- 2 Minna T/S 132kV Bida line - 32 spans
- 3 Apo T/S 132kV Keffi line - 36 spans
- 4 Shiroro T/S 330kV Jebba line 2 - 28 spans

12 (G) UNAVAILABLE SYNCHROSCOPES :

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

