

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SUNDAY 24/02/2019

FOR: EVENTS OF SATURDAY 23/02/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,960	01:00	23/02/2019
GENERATION CAPABILITY	6061.4	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5636.6	-do-	-do-
PEAK GENERATION	4712.3	-do-	-do-
LOWEST GENERATION	3678.4	17:00	23/02/2019
8-HOURLY DURATION PEAK	4712.3	0100-0800	-do-
	4473.1	0900-1600	-do-
	4380.7	1700-2400	-do-
PEAK GENERATION TO DATE	5375	21:30	7/2/2019
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	347	Ikot-Ekpene T/S	24:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso T/S	13:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.37	16:06
LOWEST FREQUENCY	49.95	22:37

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Feb., 2019		No. of days since last total collapse: 04											
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 316											
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 243											
	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
2011	Total	--	--	--	--	4	3	1	1	--	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	--	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	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	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	--	15
	Partial	1	0	1	0	0	0	1	0	3	3	--	9
2018	Total	5	1	0	0	0	1	1	--	--	--	1	11
	Partial	0	0	0	1	0	--	--	0	--	--	--	1
2019	Total	4	1	--	--	--	--	--	--	--	--	--	4
	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	384	312
2 JEBBA	HYDRO	372	225
3 SHIRORO	HYDRO	175	108
4 EGBIN ST2 - 5	STEAM	483	478
5 SAPELE	STEAM	60	60
6 DELTA	GAS	338	267
7 AFAM IV-V	GAS	54	49
8 GEREGU GAS	GAS	215	216
9 OMOTOSHO GAS	GAS	120.4	120.6
10 OLORUNSOGO GAS	GAS	196.8	170.2
11 GEREGU NIPP	GAS	219	210
12 SAPELE NIPP	GAS	96.4	82.2
13 ALAQJI NIPP	GAS	70.1	72.4
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	109.2	101.8
16 ODUKPANI NIPP	GAS	402.4	273.1
17 IHOVBOR NIPP	GAS	93.8	85.6
18 OKPAI	GAS	191	176
19 AFAM VI	GAS	297	250
20 IBOM POWER	GAS	92.9	77.2
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	53	57.9
24 TRANS AMADI	GAS	21.8	0
25 RIVERS IPP	(GAS)	80	0
26 AZURA - EDO IPP	(GAS)	423	225
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	67	61.4
29 GBARAIN NIPP	GAS	97.5	0
TOTAL		4712.3	3678.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED	AV. POWER GENERATED	ENERGY SENT OUT	AV. POWER SENT OUT
		MWH	MWHH	MWH	MWHH
1 KAINJI	HYDRO	9294.00	387.25	9277.60	386.57
2 JEBBA	HYDRO	8398.00	349.92	8375.08	348.96
3 SHIRORO	HYDRO	3697.00	154.04	3664.99	152.71
4 EGBIN ST2 - 5	STEAM	11608.00	483.67	10938.50	455.77
5 SAPELE	STEAM	1457.70	60.74	1353.60	56.40
6 DELTA	GAS	7516.07	313.17	7401.60	308.40
7 AFAM IV-V	GAS	1257.73	52.41	1252.31	52.18
8 GEREGU GAS	GAS	5628.60	234.53	5602.13	233.42
9 OMOTOSHO GAS	GAS	2938.00	122.42	2914.50	121.44
10 OLORUNSOGO GAS	GAS	4518.59	188.27	4486.88	186.95
11 GEREGU NIPP	GAS	5713.17	238.05	5693.63	237.23
12 SAPELE NIPP	GAS	2360.93	98.37	2344.61	97.69
13 ALAQJI NIPP	GAS	1687.44	70.31	1686.19	70.26
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2542.40	105.93	2522.90	105.12
16 ODUKPANI NIPP	GAS	7120.16	296.67	7081.76	295.07
17 IHOVBOR NIPP	GAS	2160.00	90.00	2141.01	89.21
18 OKPAI	GAS	4436.00	184.83	4309.80	179.58
19 AFAM VI	GAS	5721.78	238.41	5618.68	234.11
20 IBOM	GAS	2018.42	84.10	2010.00	83.75
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	7462.50	310.94	7433.80	309.74
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1303.20	54.30	1270.61	52.94
25 TRANS AMADI	GAS	130.30	5.43	121.70	5.07
26 RIVERS IPP	GAS	539.40	22.48	535.00	22.29
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1561.10	65.05	1554.30	64.76
29 GBARAIN NIPP	GAS	1528.00	63.67	1517.30	63.22
TOTAL		102,598.49	4,274.94	101,108.48	4,212.85

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 24/02/2019

	STATIONS	NO OF UNITS INSTALLED	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 50.20Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	400	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.
	JEBBA HYDRO	6	2G1 - 4 4	360	360	2G1, 3 & 4 3	270	267	2G2 - Out due to low load demand by the Discos. 2G5 - Out for annual maintenance. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1 & 2 2	300	110	411G1 & 2 - Generation reduced due to low load demand by the Discos. 411G3 - Out due to radiators oil leakage. 411G4 - Out on water management.
	EGBIN STEAM	6	ST1, 2, 4 & 5 4	880	491	ST1, 2, 4 & 5 4	491	491	ST1, 2, 4 & 5 - Generation reduced due to gas constraints. GT3 - Out due to technical problems. GT6 - Out on gas constraints.
	SAPELE (STEAM)	6	ST3 1	120	50	ST3 1	50	50	ST1 & 2 - Tripped on high vibration. ST4 - Out on fault. ST5 - Awaiting major overhaul.
	DELTA (GAS)	18	GT6, 7, 10 - 13, 15, 16 & 20 9	475	445	GT6, 7, 10 - 13, 15, 16 & 20 9	445	325	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT8 & 14 - Out on major overhaul. GT9 - Out due to gas constraint. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. GT19 - Out on gas constraints. Generation reduced due to gas constraints.
	AFAM IV & V (GAS)	8	GT18 1	70	55	GT18 1	55	55	GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 - Out due to gas constraint. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 & 13 2	290	213	GT12 - Out due to line constraints. GT13 - Generation reduced due to low load demand by the Discos.
	OMOTOSHO GAS	8	GT2, 4, 7 & 8 4	168	152	GT2, 4, 7 & 8 4	121	121	GT1, 3, 5 & 6 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1, 2, 4, 5, 6 & 7 6	252	228	GT1, 2, 4, 5, 6 & 7 6	200.9	172.8	GT3 & 8 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT21 & 22 2	290	217	GT22 - Generation reduced due to low load demand by the Discos. GT23 - Out due to line constraints.
	SAPELE NIPP	4	GT1 1	112.5	112.5	GT1 1	112.5	98.2	GT2 - Out due to leakage on the vent line. GT3 - Out due to gas constraint. GT4 - Out due to high air inlet differential pressure.
	ALAOJI NIPP GAS	4	GT1 1	120	120	GT1 1	71.8	71.8	GT2 - Out due to gas constraint. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	0 0	0	0	0 0	0	0	GT1, 2 & 3 - Shut down due to low gas pressure. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT2 1	125	120	GT2 1	120	108.5	GT1 - Out on maintenance. GT3 & 4 - Out due to gas constraint.
	ODUKPANI NIPP	5	GT1 - 5 5	575	575	GT1, 3 & 4 3	345	240.9	GT2 & 5 - Out due to low load demand by the Discos. GT1, 3 & 4 - Generation reduced due to low load demand by the Discos.
	IHOVBOR NIPP	4	GT1 1	112.5	112.5	GT1 1	112.5	95.6	GT1 - On manual adjustment to frequency. GT2 & 4 - Out due to gas constraints. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out due to low load demand by the Discos.
IPP	OKPAI GAS/STEAM	3	GT12 & ST18 2	220	220	GT12 & ST18 2	220	187	GT11 - Out on maintenance. ST18 - Generation reduced due to boiler problem
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	225	GT11 - 13 - Generation reduced due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT13 1	150	150	0 0	0	0	GT11 - Tripped on flame monitor. GT12 & ST10 - Out due to gas constraint. GT13 - Out due to reduced load flow on Afam axis.
	IBOM POWER GAS	3	GT3 1	120	115	GT3 1	115	82.3	GT1 & 2 - Out due to fire outbreak on the control panel.
	AES	9	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, 3 & 5 3	75	60	GT1, 3 & 5 3	57.5	57.5	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	0 0	0	0	0 0	0	0	GT1, 2 & 4 - Out due to gas constraint. GT3 - Out on fault.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out due to gas constraints & low demand by the Discos.
	SUB TOTAL	141	61	6156	5587	54	4568.2	3588.6	Frequency = 50.20Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 24/02/2019 FOR UNITS ON BILATERAL AGREEMENT									
	PARAS ENERGY	8	GT3 -10	70	65.4	GT3 -10	65.4	65.4	Available units on bar.
			8			8			
	SUB TOTAL	8	8	70	65.4	8	65.4	65.4	
	GRAND TOTAL	149	69	6226	5652.4	62	4,633.60	3,654.00	Frequency = 50.20Hz

1.7C BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 23/02/2019								
EGBIN ST6 5MW 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		13		OUTAGE ON FEEDER 2	
	PTC EXPRESS	ON	0100HRS		13		OUTAGE ON FEEDER 2	
	SANKYO	2	0100HRS		24		NIL	
	FEEDER 8	11	0700HRS		24		NIL	
IKORODU	PULK IT	3	2400HRS		18		OUT ON FAULT FROM DIST.	
	INDUSTRIAL	1	1800HRS		24		NIL	
	SPINTEX	7	0200HRS		24		NIL	
	DANGOTE	ON	0100HRS		24		NIL	
	LAND CRAFT	18	0200HRS		23		TRIPPED ON O/C PHASE A	
ALAUSA	TR4 15MVA	5.8	2200HRS		23		OTA/OGBA 132KV LINE TRIPPED AT BOTH ENDS	
	TR5 -15MVA	3.7	0100HRS		22		OTA/OGBA 132KV LINE TRIPPED AT BOTH ENDS AND THE FEEDER TRIPPED ON INST O/C	
	ALAUSA	7.7	0100HRS		23		OTA/OGBA 132KV LINE TRIPPED AT BOTH ENDS	
M/LAND	PTC (MARYLAND)	18	1000HRS		19		TRIPPED ON E/F	
	TOTAL LOAD							

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF SATURDAY 23/02/2019							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	67.1	21:00	61.4	15:00	24	1558	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI SATURDAY 23/02/2019									
COMPANY NAME	VOL-TAGE LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME	MIN LOAD (MW)	TIME	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	ON	ON	ON	ON	ON	ON	ON	ON
KAM STEEL		25.0	19.4	20:00	0.4	07:00	24	44.4	SUPPLY NOT INTERRUPTED
ASHAKA CEMENT		0	10.4	13:00	5.5	20:00	24	194.8	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	18.9	03:00	1.3	07:00	24	280.5	SUPPLY NOT INTERRUPTED
XING 2		0	4:48	04:00	1.75	07:00	24	226.5	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	4.2	07:00	1.7	18:00	24	67.9	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	0.1	01:00	0.1	02:00	24	2.4	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.5	07:00	0.5	02:00	24	12	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: SUNDAY 24/02/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.73	103.30	372.39
TAIL WATER ELEVATION (METERS)	105.4	73.9	270.0
GROSS OPERATING HEAD (METERS)	36.33	29.40	102.39
AVERAGE TURBINE DISCHARGE (M3/SEC)	1169.00	1257.00	187.00
AVERAGE SPILLAGE (M3/SEC)	516.00	12.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1685.00	1269.00	187.00
COMPUTED INFLOW (M3/SEC)	1685.00	1582.00	0.00
STORAGE DIFFERENTIAL	0.00	313	-187
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355.00

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT SATURDAY 23/02/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	568.3	23:00		485.1	16:00
EKO					
IKEJA	565.0	06:00		340.7	16:00

2.0 GAS POSITION: SUNDAY 24/02/2019

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	501	1100		491	609
DELTA (GAS)	336	915		445	470
OMOTOSHO GAS	133.6	336.8		121	215.8
OMOTOSHO NIPP	101	500		120	380
OLORUNSOGO (GAS)	198.4	336		200.9	135.1
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	99.1	500		112.5	387.5
SAPELE STEAM	0	720		50	670
AFAM IV-V	0	300		55	245
AFAM VI	140	650		0	650
GEREGU GAS	273	435		290	145
GEREGU NIPP	422	480		290	145
OKPAI (GAS/STEAM)	50	480		220	260
ALAOJI NIPP	111.7	504		71.8	432.2
IHOVBOR NIPP	100.7	337.5		112.5	225
IBOM	86.9	198		115	83
ODUKPANI NIPP	318.5	625		345	280
TOTAL	2871.9	9122.30		3039.7	6082.6

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 23/02/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 24/02/2019 = 0MW. FREQUENCY 50.20Hz.

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	Gregu 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 24/02/2019 as at 0600Hrs was = 1870.7MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO LINE CONSTRAINTS					
1	Afam VI GT13	150	0	150	440
2	Gregu GT12	145	0	145	
3	Gregu NIPP GT23	145	0	145	
4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Odukoani GT1 - 5	575	240.9	334.1	1430.7
2	Gregu Gas GT13	145	80	65	
3	Gregu NIPP GT22	145	80	65	
4	Jebba 2G2	90	0	90	
5	Azura-Edo GT11 - 13	461	225	236	
6	Shiroro 411G1 & 2	300	110	190	
7	Olorunsogo Gas GT1, 2, 4, 5, 6 & 7	200.9	172.8	28.1	
8	Rivers GT1	160	0	160	
9	Gbarain NIPP GT1	112.5	0	112.5	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G4	150	0	150	150
Grand Total					1870.7

5.0 **OUTAGES:**

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

1 22:33 through 24:00Hrs, Afam VI GT11 tripped on flame monitor trip. LHR = 150MW

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

- 1 02:35 - 02:47Hrs, Alaoji/Umuahia 132kV line 1 tripped at Alaoji T/S with no relay indications. LHR = 20MW
2 02:47 through 24:00Hrs, Umuahia T/S 2 X 30/40MVA 132/33kV transformer ET1 and ET2 primary and secondary CBs tripped on differential protection during the restoration of Alaoji/Umuahia 132kV line 1. LHR = 20MW
3 12:12 - 12:24Hrs, Kumbotso/Tamburawa 132kV line CB tripped at Kumbotso T/S on O/C Yellow phase. LHR = 14MW
4 14:08 - 14:27Hrs, Adiorbor/Calabar 132kV line 1 tripped at Adiorbor T/S on E/F. LHR = 29.2MW
5 14:49 - 15:02Hrs, Ikorodu/Maryland 132kV line 1 CB tripped a Ikorodu T/S on O/C phase A. LHR = 0.1MW
6 14:51 - 15:42Hrs, Otta/Ogba 132kV line CB tripped at Otta T/S on instantaneous O/C, O/C time delay, instantaneous E/F, O/C trip phase 2 L2, O/C trip phase 3 L3. LHR = 38MW
7 15:04 - 15:25Hrs, Delta/Benin 330kV line (cct G3B) CBs tripped at both ends on the following relay indications:

At Delta T/S:

Siemens relay: Distance protection relay, E/F, O/C Red phase zone 1 trip, relay trip, trip time = 64ms, PU time = 134ms, distance = 57.9km

At Benin T/S:

ABB relay: Trip=trip, trip=TRL1, PHF-STFW (L1 & PE), ZM1-trip, EFC-CS, AR in progress, DEF block, ZM2 & 3-start, ZCIP-CSL1, TOC-STL1, fault loop - L1-N, distance = 49.5km

Trip relay MVAJ 86A and lock out trip. No load loss as cct S4G was in service.

- 8 16:23 - 17:04Hrs, Alaoji/Owerri 132kV lines 1 & 2 CBs tripped at Owerri T/S on instantaneous time Z1, fault type C & G, external trip. LHR = 40MW
9 16:30 - 17:04Hrs, Owerri/Ahoada 132kV line 1 CB tripped on DEF. No load loss as line 1 was in service.

- 10 19:59 - 21:04Hrs, Onitsha/Alaoji 330kV line (cct T4A) CBs tripped at both ends on the following relay indications:

At Onitsha T/S:

Ohmega relay: Zone 1, phases B & C-N

Micom relay: Zone 1, DEF trip started phases B & C-N, trip phase B-N, distance started zones 1 – 3, zone 1 distance trip, duration = 40ms, location 50.49km

At Alaoji T/S:

Phases B & C-N, aided trip, DEF aided trip, back up trip. No load loss as cct A2K was in service.

- 11 19:59 – 20:30Hrs, Alaoji/Owerri 132kV line 1 CB tripped at Owerri T/S on DEF. LHR = 16MW

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

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

- 1 06:28 through 24:00Hrs, Trans-Amadi GT2 was shut down due to low gas pressure. Load loss = 21.7MW
2 07:48 through 24:00Hrs, Rivers IPP GT1 was shut down due to gas constraints. Load loss = 10MW
3 11:10 - 12:10Hrs, Katampe T/S 2 X 60MVA 132/33kV transformer T1 & T2 were taken out of service due to fire outbreak in the communication room. Load loss = 47MW
4 20:58 through 24:00Hrs, Afam VI GT13 was shut down due to reduced load flow on that axis as cct T4A was out. 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 ODUK PANI, 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:-**

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

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- cct A1K.**

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:- ccts D3T, J2H & K4U**

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

6 **WEATHER REPORT:-** Rainfall reported at Olorunsogo, Ijebu-Ode, Iseyin, Alaoji, Onitsha, Lokoja

7 **INTERNATIONAL LINES:-**

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

Maximum load - 264MW at 23:00Hrs.
Minimum load - 209MW at 08:00Hrs.

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

Maximum load - 96.0MW at 20:00Hrs.
Minimum load - 64.0MW at 08:00Hrs.

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

Maximum load - 32.5MW at 20:00Hrs.
Minimum load - 17.3MW at 11:00Hrs.

8 **MISCELLANEOUS:-**

- 1 01:33 through 24:00Hrs, Shiroro 411G4 was shut down for water management. Load loss = 50MW
2 02:58 through 24:00Hrs, Odukpani NIPP GT5 was shut down due to low load demand by the Discos. Load loss = 98.7MW
3 16:09 - 20:41Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 72MW

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

10 **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/FAX	38	34
OPTIC FIBRE	13	12
PLS	14	4

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	4	4
330kV	19	6	13
132kV	102	78	24

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 reactor installed.

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.
- Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.
- Egbin/Oke-Aro 330kV line 2 (N8K) Defective. Needs replacement.
- Egbin/Ikeja-West Tie CB Defective. Needs replacement.
- Egbin/Aja 330kV line 3 (cct N3J) - Tie CB defective.Needs replacement.

BENIN REGION:

1 Omotosho T/S 330kV, 2nd series 330kV CB #3322 out due to control circuit problem.

PORT HARCOURT REGION:

cct A1K CB

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

SHIRORO REGION

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

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

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

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

12(E) **UNAVAILABLE SKYWIRES**

LAGOS REGION

- Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 330kV Ikeja West/Osogbo line. - 95 spans.
- Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- Ikeja West/Akangba 330kV line 2 - 1 span.
- Ikeja West/Ilupeju 132kV lines 1 & 2 - 8 spans.
- Akangba/Itire 132kV lines 1 & 2 - 1 span.
- Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- Ikeja West/Otta 132kV lines 1 & 2 - 17 spans.

SHIRORO REGION

- Jebba T/S 330kV Osogbo lines 1 & 2 and Ganmo line - 9 spans
- Minna T/S 132kV Bida line - 32 spans
- Shiroro T/S 330kV Jebba line 2 - 28 spans

ABUJA REGION

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

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- Ikeja West, Onitsha, Egbin, Ugwuaji, 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) - 08105894708, CUG: 07016228668

