

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF WEDNESDAY 07/02/2018

FOR: EVENTS OF TUESDAY 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	21:30	06/02/2018
GENERATION CAPABILITY	7944.2	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5668.2	-do-	-do-
PEAK GENERATION	4747.6	-do-	-do-
LOWEST GENERATION	3901.7	11:00	06/02/2018
8-HOURLY DURATION PEAK	4552.3	0000-0800	-do-
	4172.1	0900-1600	-do-
	4747.6	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	347	Omotosho T/S	04:00
LOWEST VOLTAGE FOR THE DAY	293	Sakate T/S	19:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.50	07:46
LOWEST FREQUENCY	50.03	22:44

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 06												
Date of last partial collapse: 17th Oct., 2017		No. of days since last partial collapse: 109												
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	--	0	2	0	3	1	0	0	1	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	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	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	412	363
2 JEBBA	HYDRO	357	315
3 SHIRORO	HYDRO	193	64
4 EGBIN ST2 - 5	STEAM	447	379
5 SAPELE	STEAM	0	0
6 DELTA	GAS	551	524
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	384	246
9 OMOTOSHO GAS	GAS	133.6	132.6
10 OLORUNSOGO GAS	GAS	162.1	153.4
11 GEREGU NIPP	GAS	138	123
12 SAPELE NIPP	GAS	194.4	170.8
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	191.4	168.2
15 OMOTOSHO NIPP	GAS	216.8	200.3
16 ODUK PANI NIPP	GAS	380.5	253.1
17 IHVOBOR NIPP	GAS	0	0
18 OKPAI	GAS	314	162
19 AFAM VI	GAS	0	0
20 IBOM POWER	GAS	79.3	81.6
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	59.7	56.3
24 TRANS AMADI	GAS	43.3	36.3
25 RIVERS IPP	(GAS)	150	148
26 AZURA - EDO IPP	(GAS)	0	0
27 EGBIN ST6	(GAS)	173	162
28 PARAS ENERGY	(GAS)	70.2	68.6
29 GBARAIN NIPP	GAS	97.1	94.2
<b>TOTAL</b>		<b>4747.6</b>	<b>3901.7</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	8954.00	373.08	8935.80	372.33
2 JEBBA	HYDRO	7991.00	332.96	7967.33	331.97
3 SHIRORO	HYDRO	4905.00	204.38	4876.87	203.20
4 EGBIN ST2 - 5	STEAM	9264.00	386.00	8738.20	364.09
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	12879.62	536.65	12715.10	529.80
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	7082.50	295.10	7052.69	293.86
9 OMOTOSHO GAS	GAS	3220.00	134.17	3195.70	133.15
10 OLORUNSOGO GAS	GAS	3434.75	143.11	3404.25	141.84
11 GEREGU NIPP	GAS	3605.63	150.23	3588.46	149.52
12 SAPELE NIPP	GAS	4240.84	176.70	4220.37	175.85
13 AZURA - EDO IPP	GAS	571.00	23.79	559.70	23.32
14 ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
15 OLORUNSOGO NIPP	GAS	3529.30	147.05	3480.50	145.02
16 OMOTOSHO NIPP	GAS	4894.80	203.95	4871.30	202.97
17 ODUK PANI NIPP	GAS	7192.22	299.68	7151.32	297.97
18 IHVOBOR NIPP	GAS	0.00	0.00	0.00	0.00
19 OKPAI	GAS	5531.00	230.46	5385.50	224.40
20 AFAM VI	GAS	0.00	0.00	0.00	0.00
21 IBOM	GAS	1803.04	75.13	1796.00	74.83
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	1333.70	55.57	1306.91	54.45
25 TRANS AMADI	GAS	915.40	38.14	892.50	37.19
26 RIVERS IPP	GAS	2817.90	117.41	2812.68	117.20
27 EGBIN ST6	STEAM	3959.00	164.96	3761.70	156.74
28 PARAS ENERGY	GAS	1655.70	68.99	1650.30	68.79
29 GBARAIN NIPP	GAS	2106.00	87.75	2090.40	87.10
<b>TOTAL</b>		<b>101,886.40</b>	<b>4,245.27</b>	<b>100,454.18</b>	<b>4,185.59</b>

1.7A GENERATION POSITION AT 06:00HRS OF WEDNESDAY 07/02/2018

	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	393	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	343	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	390	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	356	GT11 - 13 - Generation reduced due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 3, 4 & 6 4	152	136.6	GT2, 5, 7 & 8 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 5, 6 & 8 5	190	162.8	GT1, 3 & 7 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT23 1	120	128	GT21 - Out on maintenance. GT22 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	230	230	GT1 & 3 2	230	186.1	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	171.7	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	201.5	GT1 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT1 - 4 4	480	460	GT1 - 4 4	460	361.4	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	0 0	0	0	GT2 - Out due to the tripping of Alaoji/Owerri 132kV line 2.
IPP	OKPAI GAS/STEAM	3	GT11,12 & ST18 3	375	375	GT11,12 & ST18 3	375	302	Available units on bar.
	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 - Undergoing synchronizing process.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	82.5	GT1 & 2 - Out on fault. GT3 - Generation reduced due to line constraint.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	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	58.3	GT1 - Out due to excitation problem. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.
	TRANS-AMADI	4	GT1 & 2 2	50	41.7	GT1 & 2 2	41.7	41.7	GT3 - Out on fault. GT4 - Out on maintenance.
	RIVERS	1	GT1 1	180	160	GT1 1	160	110	GT1 - Generation reduced due to frequency management
	<b>SUB TOTAL</b>	<b>125</b>	<b>81</b>	<b>7809.5</b>	<b>7657.2</b>	<b>58</b>	<b>5243.7</b>	<b>4219.6</b>	Frequency = 50.27Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 07/02/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	ST6		220	220	ST6		220	170	Available unit on bar.
		1	1			1	1			
EGBIN	1	1	1	220	220	1	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			8	8			
<b>SUB TOTAL</b>		<b>9</b>	<b>9</b>	<b>289.4</b>	<b>289.4</b>	<b>9</b>	<b>9</b>	<b>289.4</b>	<b>239.4</b>	
<b>GRAND TOTAL</b>		<b>134</b>	<b>90</b>	<b>8098.9</b>	<b>7946.6</b>	<b>67</b>	<b>67</b>	<b>5,533.10</b>	<b>4,459.00</b>	Frequency = 50.27Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 06/02/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK
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Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY

OGBA	U-STEEL	ON	0100HRS	7	O/C R-PHASE & E/F
	PTCEXPRESS	12	0800HRS	15	O/C R-PHASE
SANKYO	ON	0100HRS	24	NIL	
FEEDER 8	12	2000HRS	2	NIL	
IKORODU	PULK IT	4	1400HRS	24	NIL
	INDUSTRIAL	21	1500HRS	24	NIL
	SPINTEX	3	0600HRS	24	NIL
	DANGOTE	3	1200HRS	24	NIL
	LAND CRAFT	44	0300HRS	24	NIL
ALAJUSA	TR4 15MVA	9.2	1000HRS	24	NIL
	TR5 -15MVA	6.4	1000HRS	24	NIL
	ALAJUSA	17.5	0800HRS	18	TRIPPED ON INST. O/C AND E/F
MLAND	PTC (MARYLAND)	18	0900HRS	18	TRIPPED ON E/F
<b>TOTAL LOAD</b>		<b>150.1</b>			

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	71	24	24	NIL

1.8 HYDROLOGICAL DATA: WEDNESDAY 07/02/2018

	KAINJI	JEBBA	SHRORO
HEAD WATER ELEVATION (METERS)	141.08	102.08	372.01
TAIL WATER ELEVATION (METERS)	104.11	74.00	270.40
GROSS OPERATING HEAD (METERS)	36.97	28.08	101.61
AVERAGE TURBINE DISCHARGE (M3/SEC)	1116.00	1321.00	231.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1116	1321	231
COMPUTED INFLOW (M3/SEC)	566.00	1205.00	54.00
STORAGE DIFFERENTIAL	-550.00	-116	-177
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 TUESDAY 06/02/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	496.00	20:00	527.87	358.2	09:00
EKO	515.4	16:00	604.92	413.1	23:00
IKEJA	578.2	07:00	688.53	411.6	14:00

2.0 GAS POSITION: WEDNESDAY 07/02/2018

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
SAPELE NIPP	184	500		230	270
SAPELE 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
IKPAL (GAS/STEAM)	146	480		375	105
ALAOJU 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		460	165
<b>TOTAL</b>	<b>2882.4</b>	<b>9235.47</b>		<b>4374.5</b>	<b>4860.3</b>

1 MMSCF IS EQUIVALENT TO 3.79MW

3.0 SPINNING RESERVE FOR : TUESDAY 06/02/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 07/02/2018 = 0MW. FREQUENCY 50.27Hz.

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	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

4.0 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Wednesday 07/02/2018 as at 0600hrs was = 2833.3MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNUTILIZED GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Omotosho GT1	120	0	120	2253.3
2	Ihobor GT1 & 2	225	0	225	
3	Alaoji NIPP GT1, 2 & 4	360	0	360	
4	Olorunsogo Gas GT1, 3 & 7	114	0	114	
5	Olorunsogo NIPP GT1 - 3	360	171.7	188.3	
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	0	145	
10	Geregu Gas GT11 - 13	435	356	79	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1296.08MMSCF OF GAS (EQUIVALENT TO 4860.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	82.5	32.5	145
2	Gbarain NIPP GT2	112.5	0	112.5	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Shiroro 411GT1	145	50	95	145
2	Rivers IPP GT1	160	110	50	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Shiroro 411G3 & 4	290	0	290	290
<b>Total</b>					<b>2833.3</b>

5.0 **OUTAGES:**

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

- 1 06:29 - 20:25Hrs, Odokpani NIPP GT1 tripped on high air inlet filter pressure. LHR = 95MW.
- 2 08:04 – 13:30Hrs, Okpai P/S ST18 tripped and the relay indications yet to be given. LHR = 50MW.
- 3 13:27 – 16:46Hrs, Rivers IPP GT1 tripped on reverse power due to the tripping of Alaoji/Afam 132kV line 2. LHR = 152MW.
- 4 13:27Hrs, Omoku P/S GT2, 5 & 6 went on FSNL due to the tripping of Alaoji/Afam 132kV line 2. LHR = 19.5MW, 19.6MW & 17.5MW respectively. 14:03Hrs, GT2 was tied. 14:06Hrs, GT6 was tied. 14:11Hrs, GT5 was tied.
- 5 13:27 – 14:21Hrs, Trans Amadi P/S GT1 tripped on reverse power due to tripping of Alaoji/Afam 132kV line 2. LHR = 20.1MW.
- 6 13:27 – 14:18Hrs, Trans-Amadi P/S GT2 went on house load due to the tripping of Alaoji/Afam 132kV line 2. LHR = 19.9MW.
- 7 22:26 through 24:00Hrs, Gbarain GT2 tripped on reverse power due to tripping of Alaoji/Owerri 132kV line 2. LHR = 96.6MW.

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

- 1 06:27 – 06:37Hrs, Osogbo/Ihovor 330kV line (cct H7V) CBs tripped at both ends on the following relay indications:  
**At Osogbo T/S:** Ohmega relay: zone 1, Phase A, E/F and DEF forward, 86A/2, distance = 137.38km.  
 ABB relay: Trip start L1 and PE, zone 1 trip, ZCOM CS, fault loop L1 –N, location = 196km, 86ABC/2.  
**At Ihovor T/S:** Micom relay – distance main protection start Phase A –N, trip phase A –N, distance Z1 – 3, distance trip Z1, O/C start 1>I, E/F start IN>1, backup protection trip and master trip relay, fault location = 132.1km. No load loss as cct V7B was in service.
- 2 06:24 – 06:47Hrs, Olorunsogo/Ayede 330kV line (cct R2A) CBs tripped at both ends on the following relay indications:  
**At Olorunsogo T/S:** Nari relay – ZM1 –OP, ABB, AB & C = 20ms, fault location = 24.7km.  
**At Ayede T/S:** Siprotec relay – General trip, Red Phase, zone 1, E/F, Phase fault, O/C PU IP L2, PU time = 104ms, trip time = 655ms, distance = 101.2km.  
 Ohmega relay – zone 1, Phase A & B, Earth, distance = 120.98km. No load loss as ccts H2A & R1W were in service.
- 3 13:27 – 13:48Hrs, Alaoji/Afam 132kV line 2 CB tripped at Alaoji T/S on Micom relay – 1> Phase L1, ti > phase L1- 3. LHR = 62MW.
- 4 18:02 – 18:05Hrs, Ikot –Ekpene/Ugwuaji 330kV line 4 (cct K4U) CB tripped at Ikot. Ekpene T/S without relay indication. No load loss as ccts A2K & K3U were in service.
- 5 19:02 – 19:09Hrs, New Haven/Nkalagu 132kV line 2 CB tripped at New Haven T/S on O/C Yellow & Blue Phases and lockout relay. LHR = 16.4MW.
- 6 22:24 – 22:38Hrs, Alaoji/Owerri 132kV line 2 CB tripped at Owerri T/S without relay indication. LHR = 46MW

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

- 1 10:11 through 24:00Hrs, Gombe T/S 150MVA 330/132/33kV transformer T2A was taken out for annual preventive maintenance. No load loss as transformer T1 was in service.
- 2 12:58 – 20:38Hrs, Mando/Kaduna town 132kV line 1 was taken out for maintenance crew at Kaduna town T/S to de-commission the existing ACSR conductor and replace it with ACCC conductor and composite insulators. Load loss = 59MW.
- 3 12:31 - 19:03Hrs, Olorunsogo/Ikeja West 330kV line (cct R1W) was taken out for maintenance crew at Olorunsogo T/S to replace old composite insulators with new ones on tower #27. No load loss as cct R2A was in service

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

- 1 08:37 through 24:00Hrs, Geregu NIPP GT22 was shut down due to low gas pressure. Load loss = 80MW.
- 2 12:19 - 19:40Hrs, Olorunsogo NIPP GT1 was shut down to reduce load flow on cct R2A in preparation for outage on cct R1W. Load loss = 80MW.
- 3 12:24 through 24:00Hrs, Olorunsogo Gas GT1 was shut down to reduce load flow on cct R2A in preparation for outage on cct R1W. Load loss = 30MW.

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

The under mentioned line was opened on frequency control-

- 1 22:25 – 22:38Hrs, Osogbo/Akure/Ado 132kV line. LHR = 58MMW. Frequency was 49.87Hz.

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 - 234MW at 19:00Hrs.

Minimum load - 193MW at 07:00Hrs.

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

Maximum load - 92MW at 14:00Hrs.

Minimum load - 61MW at 08:00Hrs.

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

Maximum load - 29.0MW at 22:00Hrs.

Minimum load - 17.0MW at 03:00Hrs.

8 **MISCELLANEOUS:-**

- 1 09:42Hrs, Azura-Edo IPP GT13 was tied for test.
- 2 09:53Hrs, Azura-Edo IPP GT13 was shut down after test. Load loss = 20MW.
- 3 11:18Hrs, Azura-Edo IPP GT13 was tied for test.
- 4 16:42Hrs, Azura-Edo IPP GT13 was shut down after test. Load loss = 145MW.

PLC/PAX	37	33
OPTIC FIBRE	13	10
PLS	14	5

- 5 19:58Hrs, Olorunsogo Gas GT6 was tied. The unit was out due to gas constraint.
- 6 LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.
- 7 THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

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.

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





