

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF WEDNESDAY 07/03/2018

FOR: EVENTS OF TUESDAY 06/03/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	21,390	06:00	06/03/2018
GENERATION CAPABILITY	7049.2	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5055.7	-do-	-do-
PEAK GENERATION	4295.3	-do-	-do-
LOWEST GENERATION	3670.3	13:00	06/03/2018
8-HOURLY DURATION PEAK	4295.3	01:00-08:00	-do-
	4178.3	09:00-16:00	-do-
	4157.1	17:00-24:00	-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	00:00-24:00	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	352	Omotosho T/S	20:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe, Yola & Kumbotso T/S	02:00, 05:00 & 06:00

## 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.477	13:02
LOWEST FREQUENCY	49.806	12:46

## 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018		No. of days since last total collapse: 32											
Date of last partial collapse: 17 <sup>th</sup> Oct., 2017		No. of days since last partial collapse: 133											
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	1	--	--	1	1	3	4	4	3	2	--	1	20
Partial	--	--	--	--	4	3	1	1	1	2	1	--	13
2011													
Total	--	1	1	--	--	--	--	--	--	1	2	--	6
Partial	--	--	2	1	5	2	1	--	--	2	2	1	16
2012													
Total	--	--	2	3	--	--	--	--	1	--	1	1	8
2013													
Total	--	1	2	2	3	4	1	1	1	1	4	2	22
Partial	--	--	--	--	--	--	--	--	2	--	--	--	2
2014													
Total	2			2	0	3	1	0	0	1	0	0	9
Partial	--		0	0	1	0	0	0	0	0	2	1	4
2015													
Total	1	0	1	0	2	0	1	0	0	0	1	0	6
Partial	--	--	1	0	2	0	0	0	0	1	0	0	4
2016													
Total	--	--	2	3	6	5	0	0	1	1	2	2	22
Partial	--	--	1	0	1	3	1	0	0	1	0	0	6
2017													
Total	5	3	0	3	1	1	0	0	1	0	0	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	404	304
2 JEBBA	HYDRO	362	255
3 SHIRORO	HYDRO	0	0
4 EGBIN ST2 - 5	STEAM	449	447
5 SAPELE	STEAM		0
6 DELTA	GAS	605	413
7 AFAM IV-V	GAS	62	60
8 GEREGU GAS	GAS	142	123
9 OMOTOSHO GAS	GAS	142.9	132.6
10 OLORUNSOGO GAS	GAS	146.3	146
11 GEREGU NIPP	GAS	137	117
12 SAPELE NIPP	GAS	221.6	154.4
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	111.2	93
16 ODUKPANI NIPP	GAS	244.7	216.9
17 IHOVBOR NIPP	GAS	102.8	102.8
18 OKPAI	GAS	190	156
19 AFAM VI	GAS	571	542
20 IBOM POWER	GAS	0	0
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	72.3	64.9
24 TRANS AMADI	GAS	40.7	39.3
25 RIVERS IPP	(GAS)	108	125
26 AZURA - EDO IPP	(GAS)	0	0
27 EGBIN ST6	(GAS)	110	110
28 PARAS ENERGY	(GAS)	71	68.6
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4295.3</b>	<b>3670.3</b>

## 1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	896.00	374.42	8968.90	373.70
2 JEBBA	HYDRO	8309.00	346.21	8278.00	344.92
3 SHIRORO	HYDRO	0.00	0.00	0.00	0.00
4 EGBIN ST2 - 5	STEAM	10577.00	440.71	9910.50	412.94
5 SAPELE	STEAM	2632.00	109.67	2319.00	96.63
6 DELTA	GAS	11284.98	470.21	11119.10	463.30
7 AFAM IV-V	GAS	1465.90	61.08	1460.38	60.85
8 GEREGU GAS	GAS	3001.90	125.08	2979.73	124.16
9 OMOTOSHO GAS	GAS	3225.00	134.38	3201.80	133.41
10 OLORUNSOGO GAS	GAS	3485.31	145.22	3453.91	143.91
11 GEREGU NIPP	GAS	3045.50	126.90	3030.89	126.29
12 SAPELE NIPP	GAS	4815.40	200.64	4790.68	199.61
13 ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2521.40	105.06	2498.90	104.12
16 ODUKPANI NIPP	GAS	6246.19	260.26	6209.69	258.74
17 IHOVBOR NIPP	GAS	2450.00	102.08	2431.44	101.31
18 OKPAI	GAS	4370.00	182.08	4214.30	175.60
19 AFAM VI	GAS	13428.42	559.52	13207.00	550.29
20 IBOM	GAS	269.87	11.24	266.00	11.08
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	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	1572.60	65.53	1544.04	64.34
25 TRANS AMADI	GAS	992.40	41.35	966.20	40.26
26 RIVERS IPP	GAS	2105.30	87.72	2099.38	87.47
27 EGBIN ST6	STEAM	2616.00	109.00	2451.50	102.15
28 PARAS ENERGY	GAS	1685.50	70.23	1677.00	69.88
29 GBARAIN NIPP	GAS	42.30	1.76	33.80	1.41
<b>TOTAL</b>		<b>99,127.87</b>	<b>4,130.33</b>	<b>97,112.12</b>	<b>4,046.34</b>

1.7A GENERATION POSITION AT 06:00HRS OF WEDNESDAY 07/03/2018

	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	440	440	1G5, 6, 11 & 12	440	352	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. 1G11 & 12 - Generation reduced due to low head water elevation.	
			4			4				
	JEBBA HYDRO	6	2G1, 2, 4 & 5	380	380	2G1, 2, 4 & 5	380	351	2G3 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.	
	SHIRORO HYDRO	4	4	0	0	0	0	0	The station is out due to turbine pit flooding.	
	EGBIN STEAM	5	ST1, 2, 4 & 5	880	770	ST1, 2, 4 & 5	770	436	ST1, 2, 4 & 5 - Generation reduced due to gas constraint. ST3 - Tripped on high vibration.	
			4			4				
	SAPELE (STEAM)	1	ST2	115	45	ST2	45	45	ST1 - Tripped on low drum level. 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	655	655	GT7, 9 - 13, 16 & 18 - 20	520	501	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. GT4 & 15 - Out due to gas constraints. GT17 - Out on excitation trouble.	
	AFAM IV & V (GAS)	8	GT18	75	63	GT18	63	63	63	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Out on fault. GT19 & 20 - Awaiting major overhaul.
			1			1				
GEREGU GAS	3	GT11 - 13	435	435	GT12	145	60	GT11 & 13 - Shut down due to gas constraint. Generation reduced due to gas constraint.		
OMOTOSHO GAS	8	GT1 - 8	336	304	GT1, 2, 6 & 8	152	140.8	GT3, 4, 5 & 7 - Out due to gas constraint.		
OLORUNSOGO GAS	8	GT1 - 8	336	304	GT1, 2, 4, 5 & 6	190	149	GT3, 7 & 8 - Out due to gas constraint. Generation reduced due to gas constraints.		
		8			5					
GEREGU NIPP	3	GT22 & 23	290	290	GT23	145	130	GT21 - Out on maintenance. GT22 - Out due to gas constraint.		
		2			1					
SAPELE NIPP	4	GT1 & 3	230	230	GT1 & 3	225	159.6	GT1 & 3 - Generation reduced due to gas constraint. GT2 - Out due to high air inlet differential pressure. GT4 - Tripped on fire protection alarm.		
ALAQJI NIPP GAS	4	GT1, 2 & 4	375	360	0	0	0	GT1, 2 & 4 - Tripped due to low gas pressure. GT3 - Shut down due to generator air inlet filter trouble.		
		3			0					
OLORUNSOGO NIPP	6	GT1 - 3	375	360	0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out on ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.		
		3			0					
OMOTOSHO NIPP GAS	4	GT1, 2 & 4	375	360	GT2	120	106.4	GT1 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.		
ODUKPANI NIPP	5	GT1, 2, 4 & 5	500	460	GT1, 2, 4 & 5	460	380.4	GT3 - Tripped on heat vent gas module compartment fan motor trip. GT5 - Generation reduced due to gas filter problem.		
		4			4					
IHOVBOR NIPP	4	GT1 - 3	345	330	GT3	110	103.9	GT1 & 2 - Out due to gas constraint. GT4 - Out on maintenance.		
GBARAIN NIPP GAS	1	GT2	112.5	112.5	GT2	112.5	99.2	Available unit on bar.		
		1			1					
OKPAI GAS/STEAM	3	GT11 & ST18	225	225	GT11 & ST18	225	179	GT12 - Out for maintenance. GT11 - Generation reduced due to gas constraint. ST18 - Generation reduced due to broken spray water valve of boiler #12.		
		2			2					
AZURA - EDO	0	0	0	0	0	0	0	GT11 - Undergoing commissioning tests. GT12 & 13 - Awaiting commissioning.		
AFAM VI GAS/STEAM	4	GT11 - 13 & ST10	650	650	GT11 - 13 & ST10	650	457	GT13 - Generation reduced to condition steam turbine. Generation reduced on Afam management decision.		
		4			4					
IBOM POWER GAS	3	GT3	115	115	GT3	115	86.1	GT1 & 2 - Out on fault. GT3 - Generation reduced due to line constraint.		
AES	0	0	0	0	0	0	0	Out of production since 27/09/2014.		
ASCO	0	0	0	0	0	0	0	GT1 - Shut down due to leakage in the furnace.		
OMOKU GAS	6	GT1, 2 & 5	75	60	GT1, 2 & 5	60	55.3	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 - Tripped on generator lock out.		
		3			3					
TRANS-AMADI	4	GT1 & 2	50	42.2	GT1 & 2	42.2	42.2	GT3 - Out on fault. GT4 - Tripped on stator differential.		
		2			2					
RIVERS	1	GT1	180	160	GT1	160	50	Generation reduced due to gas constraint.		
	<b>SUB TOTAL</b>	<b>120</b>	<b>79</b>	<b>7549.5</b>	<b>7150.7</b>	<b>57</b>	<b>5129.7</b>	<b>3946.9</b>	Frequency = 50.24Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 07/03/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	MAX. LOAD (MW)	ST6		170	170	ST6		110	110	Available unit on bar.
		1	1			1	1			
EGBIN	1	ST6		70.2	70.2	GT2-9		70.2	70.2	Available units on bar.
PARAS ENERGY	8	8	8			8				
<b>SUB TOTAL</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>240.2</b>	<b>240.2</b>	<b>9</b>	<b>9</b>	<b>180.2</b>	<b>180.2</b>	
<b>GRAND TOTAL</b>	<b>129</b>	<b>88</b>	<b>88</b>	<b>7789.7</b>	<b>7390.9</b>	<b>66</b>	<b>66</b>	<b>5,309.90</b>	<b>4,127.10</b>	Frequency = 50.24Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 06/03/2018

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

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK	
OGBA	U-STEEL	1	0900HRS	24	NIL
	PTCEXPRESS	12	1400HRS	24	NIL
	SANKYO	OUT	NIL	NIL	TRIPPED ON O/C & E/F
	FEEDER 8	10	0100HRS	23	TRIPPED ON INST O/C
IKORODU	PULK IT	3	1300HRS	24	NIL
	INDUSTRIAL	25	1700HRS	24	NIL
	SPINTEX	5	0700HRS	24	NIL
	DANGOTE	2	1700HRS	24	NIL
	LAND CRAFT	42	2400HRS	24	NIL
ALAUUSA	TR4 15MVA	7.4	0800HRS	23	132KV LINE LOADSHEDDING
	TR5 -15MVA	6	0800HRS	23	132KV LINE LOADSHEDDING
	ALAUUSA	17.5	0900HRS	23	132KV LINE LOADSHEDDING
MLAND	PTC (MARYLAND)	12	2200HRS	22	LOADSHEDDING
<b>TOTAL LOAD</b>	<b>142.9</b>				

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	71	02:00	24	Nil

1.8 HYDROLOGICAL DATA: WEDNESDAY 07/03/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	139.55	101.70	370.93
TAIL WATER ELEVATION (METERS)	103.80	74.10	268.60
GROSS OPERATING HEAD (METERS)	35.75	27.60	102.33
AVERAGE TURBINE DISCHARGE (M3/SEC)	1169.00	1411.00	0.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1169	1411	0
COMPUTED INFLOW (M3/SEC)	116.00	1214.00	0.00
STORAGE DIFFERENTIAL	-1053.00	-197	0
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 06/03/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	478.20	11:00	527.87	233.3	21:00
EKO	496.0	20:00	604.92	358.2	09:00
IKEJA	578.2	07:00	688.53	411.6	14:00

2.0 GAS POSITION: WEDNESDAY 07/03/2018

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	436	1100	770	770	330
DELTA (GAS)	501	915	520	520	395
OMOTOSHO GAS	140.8	336.8	162	162	184.8
OMOTOSHO NIPP	106.4	500	120	120	380
OLORUNSOGO (GAS)	149	336	190	190	146
OLORUNSOGO NIPP	0	750	10	10	750
SAPELE NIPP	159.6	500	230	230	270
SAPELE STEAM	45	720	45	45	675
AFAM IV-V	63	300	63	63	237
AFAM VI	457	650	650	650	0
GEREGU GAS	60	435	145	145	290
GEREGU NIPP	149	435	145	145	290
ORPAL (GAS/STEAM)	177	480	225	225	255
ALAOJU NIPP	0	504	0	0	504
IHOVBOR NIPP	103.9	450	110	110	340
IBOM	86.1	198	115	115	83
ODUKPANI NIPP	380.4	625	460	460	165
<b>TOTAL</b>	<b>3014.2</b>	<b>9234.80</b>		<b>3940</b>	<b>5294.8</b>

1 MMSCF IS EQUIVALENT TO 3.79MW

3.0 SPINNING RESERVE FOR : TUESDAY 06/03/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 07/03/2018 = 0MW. FREQUENCY 50.24Hz.

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		382.5	
		GT4		0	
4	Geregu NIPP	GT22	35	0	0
		GT1	0		
5	Omotosho NIPP	GT2	40	0	0
		GT3		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 07/03/2018 as at 0600Hrs was = 2587.3MW.

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 NIPP GT1 & 4	240	0	240	2558.4
2	Ihobor GT1 & 2	225	0	225	
3	Alaoju NIPP GT1, 2 & 3	360	0	360	
4	Olorunsogo Gas GT1 - 8	304	149	155	
5	Olorunsogo NIPP GT1 - 3	360	0	360	
6	Omotosho Gas GT3, 4, 5 & 7	152	0	152	
7	Geregu NIPP GT22	145	0	145	
8	Geregu Gas GT11 - 13	435	60	375	
9	Rivers GT1	160	50	110	
10	Egbin ST1, 2, 4 & 5	770	436	334	
11	Sapele NIPP GT1 & 3	230	159.6	70.4	
12	Orpal GT11	150	118	32	
		0	0	0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1411.94MMSCF OF GAS (EQUIVALENT TO 5294.8MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	86.1	28.9	28.9
				0	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
				0	0
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
				0	
<b>Grand Total</b>					<b>2587.3</b>

5.0 **OUTAGES:**

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

- 00:34 - 18:20Hrs, Sapele ST02 tripped on high vibration. LHR = 45MW.
- 15:30Hrs, Trans-Amadi GTs 1 & 2 tripped on reverse power due to tripping of Afam/IPP 132kV line 1. LHR = 21.1MW & 21.8MW respectively. 16:18Hrs – GT2 was tied, 16:20Hrs – GT1 was tied.
- 15:30Hrs, Omoku GTs 1, 2, 5 & 6 tripped on reverse power due to tripping of Afam/IPP 132kV line 1. LHR = 13.7MW, 20.3MW, 20.2MW & 15.5MW respectively. 16:43Hrs – GT2 was tied, 16:45Hrs – GT5 was tied, 16:50Hrs – GT6 was tied, 16:55Hrs – GT1 was tied.
- 15:30 – 17:43Hrs, Rivers GT1 tripped on reverse power due to tripping of Afam/IPP 132kV line 1. LHR = 130MW.
- 20:40 through 24:00Hrs, Omoku P/S GT6 tripped on lock out relay. LHR = 17.1MW.

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

- 08:40 – 08:44Hrs, Birnin-Kebbi T/S 150MVA 330/132/33kV transformer primary and secondary CBs tripped on over voltage. LHR = 95MW.
- 11:10 – 11:23Hrs, Kumbotso/Tamburawa 132kV line CB tripped on O/C Red & Blue Phases. LHR = 29MW.
- 15:30 – 15:55Hrs, Afam/IPP 132kV line 1 CB tripped at Afam T/S on over voltage time delay. LHR = 110MW.

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

- 09:23 – 15:22Hrs, Gombe T/S 45MVA 132/33kV transformer T1 was taken out for maintenance crew to carry out annual preventive maintenance. Load loss = 6.6MW.
- 09:26 – 21:38Hrs, Egbin T/S 150MVA 330/132/33kV transformer IBTR1 was taken out for maintenance crew to carry out annual preventive maintenance on the transformer and replace burnt Red Phase conductor between CB 152-5 & CT 52. No load loss as 150MVA 330/132/33kV transformer IBTR2 was in service.
- 11:20 – 13:52Hrs, Onitsha T/S 150MVA 330/132/33kV transformer T3 was taken out for LMD crew to change loose bolts and nuts on the secondary Yellow Phase down dropper conductor clamp. No load loss as 150MVA 330/132/33kV transformer T4 was in service.
- 12:08 - 14:46Hrs, Jebba 2G2 was taken out for routine preventive maintenance on the unit's slip ring compartment, power transformer and essential auxiliaries. Load loss = 89MW.

5(D) **URGENT OUTAGES:**

- 10:43 - 12:13Hrs, Osogbo T/S 30MVA 132/33kV transformer 4T5 was taken out to treat hot spot on 33kV sectionalized bus. Load loss = 12.5MW
- 13:36 through 24:00Hrs, Akoka T/S 40MVA 132/33kV was opened due to low OLTC. Load loss = 9MW. 14:21Hrs, trial restoration failed on differential protection relay.
- 14:47 through 24:00Hrs, Delta P/S GT15 was shut down due to gas constraint. Load loss = 50MW
- 18:29 through 24:00Hrs, Delta G/S GT4 was shut down due to gas constraint. Load loss = 20MW.
- 19:09 – 22:58Hrs, Delta G/S GT16 was shut down due to gas constraint. Load loss = 71MW.

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 GENERATOR 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 (NOT YET IDENTIFIED).

GROUP 7 - ALL OTHER PLANTS.

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

The under mentioned line was opened on frequency control:-

- 12:41 – 12:46Hrs, Osogbo/Akure/Ado-Ekiti 132kV line. Load loss = 49MW. Frequency was 49.81Hz.
- 12:41 – 13:04Hrs, Akangba/Ojo 132kV line 2. Load loss 18MW. Frequency was 49.75Hz.
- 12:42 – 13:02Hrs & 19:10 – 19:50Hrs, Akangba/Ire 132kV line 2. Load loss = 17MW & 35MW respectively. Frequency was 49.85Hz & 49.82Hz respectively.
- 12:47 – 13:02Hrs, Akangba/Iso 132kV line 1. Load loss = 17MW. Frequency was 49.96Hz.

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A1S & K3U.

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

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts S5B & U1A.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J, A2K & F1K.

6 **WEATHER REPORT:-** Rainfall reported at Lagos.

7 **INTERNATIONAL LINES:-**

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

Maximum load - 297MW at 23:00Hrs.

Minimum load - 201MW at 14:00Hrs.

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

Maximum load - 104MW at 15:00Hrs.

Minimum load - 74MW at 08:00Hrs.

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

Maximum load - 35.7MW at 20:00Hrs.

Minimum load - 26.0MW at 07:00Hrs.

8 **MISCELLANEOUS:-**

- 07:26 - 17:39Hrs, Shiroro T/S placed Hold Off Tag (OF12) on cct J7R for the continuation of sky wire job.
- 09:39Hrs, Benin T/S placed Hold Off Tags (OF12) on ccts B6N & B5M for the continuation of corroded insulators replacement.
- 10:10Hrs, Kumbotso T/S 2x50MVAR capacitor banks 1 & 2 were switched on for voltage control. Voltage profile: 300/325kV.
- 11:04Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) CBs was restored. The line was out on voltage control.
- 12:50Hrs, Kumbotso T/S 2 X 50MVAR capacitor banks 1 & 2 CBs tripped on over voltage. V/P = 340/320kV
- 12:50Hrs, Delta P/S reduced generation on the following units due to gas constraint. GT15 - from 90MW to 50MW, GT16 - from 75MW to 50MW, GT18 - from 80MW to 50MW, GT19 - from 80MW to 50MW & GT20 - from 90MW to 40MW
- 14:20Hrs, Onitsha T/S 15MVA 132/11kV transformer TR12 was restored. The transformer tripped at 06:45Hrs of 05/03/2018.
- 16:46Hrs, Odukanpani GT4 was tied. The unit was out due to smoke coming out on bearing 2.
- 20:41Hrs, Ibom Power GT3 was tied. The unit was out due to heat exchanger problem.
- 23:29Hrs, Gbarin P/S GT2 was tied. The unit was out due to low gas pressure.

11 (A) **COMMUNICATION MEDIA**

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

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	77	25

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.

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.

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.

12 (F) **LINES WITH MISSING SKY WIRE**

**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.

**BENIN 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**

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

**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 Shiroro T/S 330kV Jebba line 2 - 28 spans

**ABUJA REGION**

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

**12 (G) UNAVAILABLE SYNCHROSCOPES :**

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





