

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT MONDAY 12/06/2017

FOR: EVENTS OF SUNDAY 11/06/2017

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	17,720	01:00	11/06/2017
GENERATION CAPABILITY	7106.1	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4501.4	-do-	-do-
PEAK GENERATION	3860	-do-	-do-
LOWEST GENERATION	3276.8	24:00	11/06/2017
8-HOURLY DURATION PEAK	3860	0000-0800	-do-
	3744.7	0900-1600	-do-
	3833.3	1700-2400	-do-
PEAK GENERATION TO DATE	5074.7	21:30	02/02/2016
MAXIMUM AVAILABLE CAPACITY TO DATE	7492.6	06:00	14/04/2014
MAXIMUM PEAK GENERATION CAPABILITY TO DATE	7099	07:00	13/04/2014
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	09:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe, Akangba & Sakate T/S	01:00, 03:00 & 04:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.659	18:38
LOWEST FREQUENCY	49.178	12:17

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th May, 2017							No. of days since last total collapse: 33							
Date of last partial collapse: 16 <sup>th</sup> March, 2017							No. of days since last partial collapse: 86							
Highest No of days ever attained in-between total collapses: 134							Highest No of days ever attained in-between partial collapses: 240							
	Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total	
2009	Total	1	--	--	--	2	5	5	4	1	--	--	1	19
	Partial	--	5	4	3	3	--	--	1	--	2	1	1	20
2010	Total	--	3	1	--	3	3	--	2	2	1	4	22	
	Partial	1	--	--	1	1	3	4	3	2	--	1	20	
2011	Total	--	--	--	--	4	3	1	1	2	1	--	13	
	Partial	--	1	1	--	--	--	1	--	1	2	--	6	
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16
	Partial	--	--	2	3	--	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	4	2	22	
	Partial	--	--	--	--	--	--	--	2	--	--	--	2	
2014	Total	2	--	--	2	--	3	1	--	1	--	--	9	
	Partial	--	--	--	--	1	--	--	--	--	2	1	4	
2015	Total	1	--	1	--	2	--	1	--	--	1	--	6	
	Partial	--	--	1	--	2	--	--	1	--	--	--	4	
2016	Total	--	--	2	3	6	5	--	1	1	2	2	22	
	Partial	--	--	1	--	1	3	1	--	--	--	--	6	
2017	Total	5	3	--	3	1	--	--	--	--	--	--	12	
	Partial	1	3	1	--	--	--	--	--	--	--	--	2	

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)
1 KAINJI	HYDRO	201	194
2 JEBBA	HYDRO	334	170
3 SHIRORO	HYDRO	0	0
4 EGBIN ST2 - 5	STEAM	314	307
5 SAPELE	STEAM	56	56
6 DELTA	GAS	392	358
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	256	247
9 OMOTOSHO GAS	GAS	174	178.6
10 OLORUNSOGO GAS	GAS	203.4	203.2
11 GEREGU NIPP	GAS	145	141
12 SAPELE NIPP	GAS	110.4	110.1
13 ALAQJI NIPP	GAS	70	114.7
14 OLORUNSOGO NIPP	GAS	112.6	103.9
15 OMOTOSHO NIPP	GAS	223.9	195.4
16 ODUKPANI NIPP	GAS	228.2	0
17 IHOVBOR NIPP	GAS	213.5	111.9
18 OKPAI	GAS	223	206
19 AFAM VI	GAS	143	143
20 IBOM POWER	GAS	90	69
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	94.9	91.2
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 EGBIN ST6	(GAS)	210	211
27 PARAS ENERGY	(GAS)	65.1	65.8
28 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>3860</b>	<b>3276.8</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	4,916.00	204.83	4,898.60	204.11
2 JEBBA	HYDRO	5,331.00	222.13	5,307.28	221.14
3 SHIRORO	HYDRO	2,372.00	98.83	2,343.30	97.64
4 EGBIN ST2 - 5	STEAM	5,485.00	228.54	5,192.80	216.37
5 SAPELE	STEAM	1,266.70	52.78	1,221.90	50.91
6 DELTA	GAS	10,570.25	440.43	10,245.10	426.88
7 AFAM IV-V	GAS	-	0.00	-	0.00
8 GEREGU GAS	GAS	6,456.60	269.03	6,428.91	267.87
9 OMOTOSHO GAS	GAS	4,070.00	169.58	4,038.70	168.28
10 OLORUNSOGO GAS	GAS	4,687.56	195.32	4,657.99	194.08
11 GEREGU NIPP	GAS	3,414.87	142.29	3,401.44	141.73
12 SAPELE NIPP	GAS	2,585.77	107.74	2,573.47	107.23
13 ALAQJI NIPP	GAS	2,160.82	90.03	2,146.12	89.42
14 OLORUNSOGO NIPP	GAS	2,816.30	109.01	2,585.20	107.72
15 OMOTOSHO NIPP	GAS	4,304.40	179.35	4,280.70	178.36
16 ODUKPANI NIPP	GAS	2,810.72	108.78	2,592.72	108.03
17 IHOVBOR NIPP	GAS	4,396.25	183.18	4,370.17	182.09
18 OKPAI	GAS	5,677.00	236.54	5,640.60	235.03
19 AFAM VI	GAS	3,557.64	148.24	3,471.37	144.64
20 IBOM	GAS	1,906.61	79.44	1,897.00	79.04
21 ASCO	GAS	-	0.00	-	0.00
22 A.E.S	GAS	-	0.00	-	0.00
23 OMOKU	GAS	1,951.40	81.31	1,916.97	79.87
24 TRANS AMADI	GAS	-	0.00	-	0.00
25 RIVERS IPP	GAS	-	0.00	-	0.00
26 EGBIN ST6	STEAM	3,898.00	162.42	3,719.90	155.00
27 PARAS ENERGY	GAS	1,463.90	61.00	1,458.70	60.78
28 GBARAIN NIPP	GAS	-	0.00	-	0.00
<b>TOTAL</b>		<b>85,698.79</b>	<b>3,570.78</b>	<b>84,388.94</b>	<b>3,516.21</b>

## GENERATION POSITION AT 06:00HRS OF MONDAY 12/06/2017

	STATIONS	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR (MW)	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS(MW)	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	1G5, 11 & 12 3	320	320	1G5, 11 & 12 3	320	210	1G6 - Out on annual preventive maintenance. 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	2G1 - 5 5	482	450	0 0	0	0	2G1-5 - Shut down for frequency management. 2G6 – Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	411G1 & 2 2	300	260	0 0	0	0	411G1 & 2 - Out due to high frequency. 411G3 & 4 - Out on maintenance.
	EGBIN STEAM	ST3 & 5 2	440	440	ST3 1	220	159	ST1 - Tripped on generator CB trouble. ST2 - Out on fault. ST4 - Out of production since 17/11/2016. ST5 - Out due to gas constraints.
	SAPELE (STEAM)	ST2 1	120	55	ST2 1	55	55	ST1 - Tripped on low control oil pressure. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	GT8 - 12, 15, 16, 18 & 19 9	525	500	GT 8 - 12, 15, 16, 18 & 19 9	500	432	GT3 & 5 – Out due to generator winding fault. GT4 - Tripped on excitation major trouble. GT6 - Out on maintenance. GT7 - Tripped due to loss of flame. GT13 - Tripped on combustion trouble. GT14 - Out on major overhaul. GT17 - Out on excitation trouble. GT20 - Out on major inspection.
	AFAM IV & V (GAS)	0 0	0	0	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 – Out on blade failure. GT17 & 18 - Out due to burnt generator transformer. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	GT12 & 13 2	290	290	GT12 & 13 2	290	256	GT11 - Shut down for maintenance work.
	OMOTOSHO GAS	GT1 - 8 8	336	304	GT2, 5-8 5	190	180	GT1, 3 & 4 - Out due to gas constraints.
	OLORUNSOGO GAS	GT1 - 5, 7 & 8 7	294	266	GT1 - 4, 7 & 8 6	228	203.5	GT5 - Out due to gas constraints. GT6 – Out on vibration trouble.
NIPP	GEREGU NIPP	GT21 - 23 3	435	435	GT23 1	145	145	GT21 & 22 - Out due to gas constraints.
	SAPELE NIPP	GT2 1	112.5	112.5	GT2 1	112.5	110.1	GT1 - Out on undisclosed fault. GT3 - Out on bearing lift pump trouble. GT4 - Tripped on loss of auxiliary.
	ALAOJI NIPP GAS	GT1, 2 & 4 3	375	360	GT1 1	120	113.4	GT2 & 4 - Out due to gas constraints. GT3 - Shut down due to generator air inlet filter trouble.
	OLORUNSOGO NIPP GAS	GT1, 2 & 3 3	375	360	GT1 1	114.7	114.7	GT2 & 3 - Out due to gas constraints. GT4 & ST2 - Out of production since 25/10/2016.
	OMOTOSHO NIPP GAS	GT1, 2 & 4 3	375	360	GT1 1	120	110	GT2 - Out due to high frequency. GT3 - Out of production since 02/08/2016. GT4 - Out due to gas constraints.
	ODUKPANI NIPP	GT2 & 5 2	250	240	0 0	0	0	GT1 - Shut down due to oil leakage on lube oil return line of the unit. GT3 - Out on fault. GT4 - Out on unit transformer problem. GT2 & 5 - Out due to tripping of Odukpani/kot-Ekpepe 330kV line.
	IHOVBOR NIPP	GT2 1	112.6	112.6	GT2 1	112.6	112.6	GT1 - Out on defective generator RTD. GT3 - Out on fault. GT4 - On maintenance.
IPP	OKPAI GAS/STEAM	GT11 & 12 2	300	300	GT11 & 12 2	300	217	ST18 - Out on maintenance.
	AFAM VI GAS/STEAM	GT11- 13 & ST10 4	650	650	GT11 1	142	142	GT12, 13 & ST10 - Out due to condensate along the gas pipeline.
	IBOM POWER GAS	GT2 & 3 2	150	150	GT3 1	115.3	94.9	GT2 - Shut down due to cut jumper conductor on Uyo/Eket 132kV line at Eket T/S.
	AES	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	GT1 - 3, 5 & 6 5	125	100	GT1 - 3, 5 & 6 5	84.2	84.2	GT4 - Out for overhaul.
	TRANS-AMADI	0 0	0	0	0 0	0	0	Out of production since 20/11/2016.
	RIVERS	0 0	0	0	0 0	0	0	Out of production since 16/09/2016.
	GBARAIN NIPP GAS	GT2 1	112.5	112.5	0 0	0	0	GT2 - Out due to fault on Owerri/Ahoadia 132kV line 2.
	<b>SUB TOTAL</b>	<b>69</b>	<b>6479.6</b>	<b>6177.6</b>	<b>42</b>	<b>3169.3</b>	<b>2739.4</b>	Frequency = 50.37Hz.

1.7B GENERATION POSITION AT 06:00HRS OF MONDAY 12/06/2017 FOR UNITS ON BILATERAL AGREEMENT

FEEDERS NAME	ST6	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK		
EGBIN	1	220	220	211	211	Available unit on bar.	
	1						
PARAS ENERGY	GT3 - 9	64.4	64.4	64.4	64.4	GT2 - Shut down due to high exhaust gas.	
	7						
<b>SUB TOTAL</b>	8	284.4	284.4	275.4	275.4		
<b>GRAND TOTAL</b>	77	6764	6462	50	3,444.70	3,014.80	Frequency = 50.37Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - SUNDAY 11/06/2017

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	on	0100hrs	24	Nil
	PTCEXPRESS	9	2100hrs	24	Nil
	SANKYO	on	0100hrs	24	Nil
	FEEDER 8	10	2100hrs	24	Nil
IKORODU	PULK IT	out	out	out	latched to a feeder
	INDUSTRIAL	19	1400hrs	20	Tripped on E/F
	SPINTEX	6	1000hrs	22	urgent outage
	DANGOTE	out	out	out	latched to a feeder
ALAUUSA	LAND CRAFT	23	2000hrs	24	Nil
	TR4 15MVA	3.3	0100hrs	24	Nil
	TR5 -15MVA	3.7	1300hrs	24	Nil
MLAND	ALAUUSA	9.1	2000hrs	20	planned outage
	PTC (MARYLAND)	14	1800hrs	23	tripping on line 5&6
<b>TOTAL LOAD</b>	<b>97.1</b>				
<b>GRAND TOTAL</b>					

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
SAKATE/IKEJA WEST 330KV LINE	65.8	24	23	Out for one hour due to tripping of Egbin/Ikorodu lines 5 & 6.

**1.8 HYDROLOGICAL DATA: MONDAY 12/06/2017**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.02	100.66	361.34
TAIL WATER ELEVATION (METERS)	102.70	73.00	270.00
GROSS OPERATING HEAD (METERS)	<b>30.32</b>	<b>27.66</b>	<b>91.34</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	731	997	134
AVERAGE SPILLAGE (M3/SEC)	266	0	0
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>997</b>	<b>997</b>	<b>134</b>
COMPUTED INFLOW (M3/SEC)	358	1194	257
STORAGE DIFFERENTIAL	<b>-639</b>	<b>197</b>	<b>123</b>
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 SUNDAY 11/06/2017**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	443.8	15:00	380.53	93.	19:00
EKO	463.6	19:00	473.98	363.1	04:00
IKEJA	573.6	22:00	496.34	290.7	03:00

**2.0 GAS POSITION: MONDAY 12/06/2017**

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	NGC DECLARED QUANTITY (MMS317.578CF/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	159		1100		220	880
DELTA (GAS)	432		765		500	265
OMOTOSHO GAS	180		336.8		190	146.8
OMOTOSHO NIPP	110		500		120	380
OLORUNSOGO (GAS)	203.5		336		228	108
OLORUNSOGO NIPP	114.7		750		114.7	635.3
SAPELE NIPP	110.1		500		112.5	387.5
SAPELE STEAM	55		720		56	664
AFAM IV-V	0		300		55	245
AFAM VI	142		650		143	507
GEREGU GAS	256		435		142	293
GEREGU NIPP	145		435		145	290
OKPAI (GAS/STEAM)	217		480		300	180
ALAOJI NIPP	113.4		504		120	384
IHOVBOR NIPP	112.6		450		112.6	337.4
IBOM	94.9		198		115.3	82.7
ODUKPANI NIPP	0		625		0	625
<b>TOTAL</b>	<b>2445.2</b>		<b>9084.8</b>		<b>2674.1</b>	<b>6410.7</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**2.1 SYSTEM BLACK START CAPABILITY**

Delta, Shiroro & Egbin - Available.

**SPINNING RESERVE FOR : SATURDAY 10/06/2017**

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

**3.0 SYSTEM SPINNING RESERVE AS AT 0600HRS OF MONDAY 12/06/2017 = 0MW. FREQUENCY 50.37Hz.**

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	
3	Delta	GT16	40	0	0
		GT17	40	0	
4	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
5	Geregu NIPP	GT22	35	0	0
6	Omotosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

**4.0 UNUTILIZED GENERATION CAPABILITY**

The unutilized generation capability for Monday 12/06/2017 as at 0600Hrs was = 2979.5MW.

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	Geregu NIPP GT21 & 22	290	0	290	1762
2	Olorunsogo NIPP GT2 & 3	240	0	240	
3	Egbin ST5	220	0	220	
4	Omotosho Gas GT1, 3 & 4	114	0	114	
5	Alaoji NIPP GT2 & 4	240	0	240	
6	Omotosho NIPP GT4	120	0	120	
7	Olorunsogo Gas GT5	38	0	38	
8	Afam VI GT12, 13 & ST10	500	0	500	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1831.62MMSCF OF GAS (EQUIVALENT TO 6410.7MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom GT2	35	0	35	387.5
2	Gbarain NIPP GT2	112.5	0	112.5	
3	Odukpani GT2 & 5	240	0	240	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY LOSS OF DISCOS' FEEDERS</b>					
1	Shiroro 411G1 & 2	260	0	260	830
2	Jebba 2G1-5	450	0	450	
3	Omotosho NIPP GT2	120	0	120	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
				0	0
				0	0
<b>Total</b>					<b>2979.5</b>

**5.0 OUTAGES:**

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

- 01:21Hrs, Egbin P/S ST2, 3 & 6 tripped due to loss of auxiliary. LHR = 150MW, 164MW & 210MW respectively. At 06:00Hrs – Egbin ST6 was tied, At 06:33Hrs – Egbin ST2 was tied, At 07:53Hrs – Egbin ST3 was tied.
- 01:22Hrs, Paras Energy units GT3-9 tripped on reverse power due to tripping of Ikorodu/Shagamu 132kV. LHR = 9.3MW each. 02:29Hrs, 02:31Hrs, 02:32Hrs, 02:34Hrs, 02:35Hrs, 02:36Hrs & 02:38Hrs – GTs 4, 5, 6, 7, 8 & 9 were tied respectively.
- 14:37 through 24:00Hrs, Odukpani GT5 tripped on reverse power due to the tripping of Odukpani/Ikot-Ekpene 330kV line 1. LHR = 113.4MW.
- 14:37 – 15:51Hrs, Ibom Power, GT3 went on island operation feeding Uyo, Eket & Itu due to the tripping of Aba/Itu 132kV line CB. Generation reduce from 79.6MW to 31MW.
- 17:17 through 24:00Hrs, Ihovbor P/S GT3 tripped due to surge as a result of thunder strike. LHR = 100.7MW.

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

- 01:21 – 02:08Hrs, Egbin/Ikorodu 132kV lines 5 & 6 CBs tripped on distance protection zone 1, BN, Distance = 36km. Load loss = 148MW.
- 14:37 through 24:00Hrs, Adabor/Calabar 132kV line 2 CB tripped at Adabor T/S without relay indication. LHR = 14.0MW.
- 14:37Hrs, Odukpani/Ikot-Ekpene 330kV line CBs tripped at both ends on the following relay indications:-  
**At Odukpani T/S:** Distance protection.  
**At Ikot-Ekpene T/S:** SEL Relay main protection 1 & 2.
- 14:37 – 14:57Hrs, Alaoji NIPP/Alaoji 330kV line 1 (cct L7A) CBs tripped at both ends on line differential protection main, fault type B, C & G. No load interruption as line 2 was in service.
- 14:37 – 15:04Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on E/F. LHR = 60MW.
- 14:58 – 17:04Hrs, Delta T/S 60MVA 132/33kV transformer T31 primary and secondary breakers tripped.  
On the primary – No relay indicated.  
On the secondary – instantaneous O/C & E/F.
- 17:45 – 17:59Hrs, Benin/Egbin 330kV line (cct B6N) CBs tripped at both ends on the following relay indications:  
At Benin T/S: ABB Relay – Trip-trip, Trip-TRL1, PHL-STFW(L2PE), ZM – trip, AR – in progress, DEF – block, (ZM2, ZM3) – start, ZCIP-CSL1, TOC – STL1, HS – TRL1, Fault loop = L1-N, Distance = 38.0km,  
Auxiliary Relay: MVAJ K86A.  
Ohmega Relay: Zone 1, Phase A – earth, fault location – 149.19km.  
At Egbin T/S: Start Phase A-N, trip ABC trip, Phase ABC, start element resistant, E/F, start I-N, distance = N/A, trip Z2. No load loss as ccts B5M & M5W were in service

**5 (C) PLANNED OUTAGES:** Nil.

**5(D) URGENT OUTAGES:**

- 11:05 – 13:16Hrs, Afam/IPP/Port Harcourt 132kV line 2 was taken out as additional apparatus for safe working space to enable maintenance crew replace burnt insulator on tower #3 of Afam/IPP/Port Harcourt 132kV line 1. LHR = 26MW.
- 11:17Hrs, Omoku P/S GTs 1-3, 5 & 6 on island operation feeding Port Harcourt to enable maintenance crew replace burnt Blue Phase isolator finger. That was to facilitate job on Afam/Port Harcourt/IPP 132kV line 1. LHR = 95.5MW.
- 18:30 – 23:50Hrs, Osgobo/Ayede 330kV line (cct H2A) was taken out as additional apparatus for safe working space for the outage on Osgobo/Akure 132kV line. No load loss as ccts R1W, R2A & H1W were in service.
- 19:07 – 23:44Hrs, Osgobo/Ihovbor 330kV line (cct H7V) was taken out as additional apparatus for safe working space due to the outage on Osgobo/Akure 132kV line. No load loss as cct H7B was in service.

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

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

The under mentioned lines was opened on frequency control:-

- 12:15 – 12:26Hrs, Osogbo/Ilesha/Ife 132kV line. LHR = 49MW. Frequency was 49.10Hz.

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

**5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts J2L & U2A.

**5 (I) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** ccts K1J, A2K & N4J.

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

**5 (K) 330KV LINES THAT ARE OUT ON LINE FAULT:-** cct L7G

**9 WEATHER REPORT:** Rainfall was reported in Osogbo, Ayede, Jos, Alaoji, Laqos, Ihovbor, Lokoja,

**10 INTERNATIONAL LINES:-**

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

Maximum load - 266MW at 20:00Hrs.

Minimum load - 191MW at 11:00Hrs.

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

Maximum load - 84MW at 14:00Hrs.

Minimum load - 52MW at 08:00Hrs.

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

Maximum load - 45.9MW at 12:00Hrs.

Minimum load - 38.0MW at 14:00Hrs.

**11 MISCELLANEOUS:-**

- 00:13 – 01:36Hrs, Jebba P/S 2G2 was shut down due to high frequency of 50.40Hz. LHR = 80MW.
- 01:13 – 01:47Hrs, Jebba P/S 2G4 was shut down due to high frequency of 50.40Hz. LHR = 83MW.
- 04:01Hrs, Shiroro P/S 411G2 was tied. The unit was shut down due to high frequency of 50.40Hz.
- 04:10Hrs, Shiroro P/S 411G1 was tied. The unit was shut down due to high frequency of 50.40Hz.
- 04:19Hrs, Ikeja West T/S 330kV 75MX Reactor R1 was switched off service for voltage control. Voltage Profile: 319/320kV.

GROUP 1 - ALL UNITS OFFERING FREE GOVERNOR FREQUENCY RESPONSE.

GROUP 2 - ALL UNITS OFFERING REGULATING RESERVE.

GROUP 3 - ALL UNITS OFFERING SPINNING RESERVE.

GROUP 4 - HYDRO IN HIGH FLOOD PERIOD SEASON, KAINJI, JEBBA AND SHIRORO.

GROUP 5 - ALL UNITS USED TO AVOID OVERLOADING TRANSMISSION LIMITS.

GROUP 6 - ALL UNITS OFFERING VOLTAGE SUPPORT OUTSIDE NORMAL LEVEL.

GROUP 7 - ALL UNITS IN LOCATION TO DIMINISH LOSSES

GROUP 8 - ALL UNITS NOT OFFERING ANY SERVICES.

**8 (A) COMMUNICATION MEDIA**

STATIONS	NO. INSTALLED	NO. WORKING
PLC/PAX	37	22
OPTIC FIBRE	13	0
PLS	14	6

**8 (B) SCADA RTU STATUS**

STATIONS	TOTAL NO OF STATIONS	NO OF RTU INSTALLED	NO OF RTU WORKING
POWER STATIONS	23	8	2
330kV	41	17	9
132kV	119	103	14

**12.0 UNAVAILABLE EQUIPMENTS**

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

**SHIRORO REGION:**

- 1 Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.

**KADUNA REGION:**

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

**ENUGU REGION:**

- 6 06:27Hrs of 10/06/2017, Port Harcourt/IPP 132kV line 1 tripped on distance protection zone 1 extension, location = 0.5km, O/C & E/F, P. U. time = 60ms, trip time = Nil, LHR = 40MW. 13:20Hrs, the line was restored.
- 7 07:02Hrs, Jebba P/S 2G4 was shut down due to high system frequency of 50.47Hz. LHR = 85MW.
- 8 07:34 – 12:28Hrs, Shiroro P/S 411G2 was shut down due to high system frequency of 50.45Hz. LHR = 130MW.
- 9 07:37 – 12:34Hrs, Shiroro P/S 411G1 was shut down due to high system frequency of 50.40Hz.
- 10 08:31 – 12:28Hrs, Delta P/S GT11 was shut down due to high system frequency of 50.4 Hz. LHR = 20MW.
- 11 08:36Hrs, Odukpai P/S GT2 was shut down due to high system frequency of 50.40Hz. LHR = 114MW.
- 12 08:40Hrs, Delta P/S GT13 was shut down due to high system frequency of 50.40Hz. LHR = 20MW.
- 13 08:41Hrs, Omotosho P/S GT2 was shut down due to high system frequency of 50.40Hz. LHR = 105MW.
- 14 08:42 – 12:34Hrs, Delta GT4 was shut down due to high system frequency of 50.40Hz. LHR = 20MW.
- 15 08:31 - 15:12Hrs, Delta P/S GT13 was shut down due to high system frequency. LHR = 20MW.
- 16 08:32 - 14:56Hrs, Delta P/S GT9 was shut down due to high system frequency. LHR = 20MW.
- 17 08:41 - 15:21Hrs, Omotosho NIPP GT2 was shut down due to high system frequency of 50.40Hz.. LHR = 112.2MW.
- 18 15:53 - 19:19Hrs, Jebba G/S 2G1 was shut down due to high system frequency. LHR = 80MW.
- 19 16:40Hrs, Osogbo/Akure 132kV line LMD crew discovered cut conductor and two broken cross arm along Ijebu-Jesha area as a result of blasted rock by quarry company hence the work will be completed tomorrow.
- 20 17:06 - 19:20Hrs, Omoku GT2 was shut down to enable Afam T/S transferr Port Harcourt load from Afam/Port Harcourt 132kV line 2 to line 1. LHR = 19.3MW.
- 21 17:07 - 19:25Hrs, Omoku GT3 was shut down to enable Afam T/S transferr Port Harcourt load from Afam/Port Harcourt 132kV line 2 to line 1. LHR = 19.4MW.
- 22 18:38 through 24:00Hrs, Jebba P/S 2G5 was shut down due to high system frequency of 50.68Hz. LHR = 75MW.
- 23 18:49 – 19:11Hrs, Shiroro P/S 411G2 was shut down due to high system frequency. LHR = 50MW.
- 24 18:52 – 19:20Hrs, Shiroro P/S 411G1 was shut down due to high system frequency. LHR = 50MW.
- 25 23:52Hrs, Ikeja West T/S 75MX Shunt Reactor R2 was put in service for voltage control. Voltage Profile: 335/332kV.
- 26 23:54 through 24:00Hrs, Shiroro P/S 411G2 was shut down due to high system frequency of 50.46Hz. LHR = 55MW.
- 27 23:56 through 24:00Hrs, Shiroro P/S 411G1 was shut down due to high system frequency of 50.40Hz. LHR = 50MW.

**12(D) LAGOS REGION**

- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S.
- 2 132kV Akangba/Itire line 1- Faulty line isolator at Akangba T/S.
- 3 Aja/Alagbon 132kV line 2 - detached conductor on tower 56 and 57.
- 4 Agbara/Ojo line 1 on soak.

**SHIRORO REGION**

- 1 Lokoja/Gwagwalada 330kV line 2 - Cut sky wire between towers 339 & 340.

- 1 Onitsha T/S 90MVA 330/132/13.8kV transformer 9T2 - Out due to differential fault.

**12 (B) UNAVAILABLE BREAKERS/SOLATORS**

**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.
- 2 Jebba/Osogbo 330kV line 1 (cct J1H) - Defective line isolator mechanism at Osogbo T/S
- 3 Osogbo/Ganmo 330kV line (cct H3G) - Defective breaker at Osogbo T/S

**ENUGU REGION:**

- 1 New Haven/Yendev 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/Yendev 132kV By pass isolator - Canibalized to repair the line isolator.

**SHIRORO REGION**

- 1 Kainji/Jebba 330kV line 1 - CB problem at Kainji T/S.
- 2 Jebba T/S 75MX reactor 2R2 CB - exploded.

**PORT HARCOURT REGION**

- 1 Alaoji/kot-Ekpene 330KV line 2 (cct A2K) Yellow Phase isolator not latching properly.

**12 (C) UNAVAILABLE/DEFECTIVE GROUND SWITCHES**

**Benin Region**

- 1 Irrua T/S: Benin/Irrua 132kV line Earth Switch - faulty.

**ENUGU REGION:**

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

**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**

**LAGOS REGION**

- 1 Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21
- 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/tire 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.
- 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, 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) - 08066067487, CUG: 09021765320
- f Coordinator (S/O) - 08037868916, 08054353904, 08028332125, CUG Airtel 08129458481.
- g SYSTEM OPERATIONS WEB SITE: [www.nigeriasystemoperator.org](http://www.nigeriasystemoperator.org)