

# TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF WEDNESDAY 16/05/2018

FOR: EVENTS OF TUESDAY 15/05/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,780	23:00	15/05/2018
GENERATION CAPABILITY	8196.8	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4993.8	-do-	-do-
PEAK GENERATION	4634.4	-do-	-do-
LOWEST GENERATION	3132.5	04:00	15/05/2018
8-HOURLY DURATION PEAK	3716.2	0100-0800	-do-
	4114.1	0900-1600	-do-
	4634.4	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	348	Omotosho T/S	03:00
LOWEST VOLTAGE FOR THE DAY	297	Sakete T/S	21:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.81	07:30
LOWEST FREQUENCY	49.67	21:07

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 1st Feb., 2018							No. of days since last total collapse: 96							
Date of last partial collapse: 12 <sup>th</sup> April., 2018							No. of days since last partial collapse: 32							
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	
2010	Total	---	3	1	--	3	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	2	--	6
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16
	Partial	--	--	2	3	--	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	4	2	22	
	Partial	--	--	--	--	--	--	--	--	2	--	--	2	
2014	Total	2			2	0	3	1	0	0	1	0	9	
	Partial			0	1	0	0	0	0	0	2	1	4	
2015	Total	1	0	1	0	2	0	1	0	0	0	1	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	0	0		9	
2018	Total	5	1	0									6	
	Partial	0	0	0	1								1	

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	267	119
2 JEBBA	HYDRO	322	146
3 SHIRORO	HYDRO	533	203
4 EGBIN ST2 - 5	STEAM	311	149
5 SAPELE	STEAM	48	47
6 DELTA	GAS	559	305
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	0	0
9 OMOTOSHO GAS	GAS	137.9	141.6
10 OLORUNSOGO GAS	GAS	128.7	135.7
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	207	133.5
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	109.3	82.1
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	100.1	80.1
18 OKPAI	GAS	346	250
19 AFAM VI	GAS	607	440
20 IBOM POWER	GAS	103.8	82.8
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	76.8	84.1
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	140	140
26 AZURA - EDO IPP	(GAS)	456	393
27 EGBIN ST6	(GAS)	110	132
28 PARAS ENERGY	(GAS)	71.8	68.6
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4634.4</b>	<b>3132.5</b>

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	5920.00	246.67	5903.70	245.99
2 JEBBA	HYDRO	5490.00	228.75	5465.64	227.74
3 SHIRORO	HYDRO	7623.00	317.63	7595.35	316.47
4 EGBIN ST2 - 5	STEAM	6810.00	283.75	6428.60	267.86
5 SAPELE	STEAM	1044.50	43.52	1044.50	43.52
6 DELTA	GAS	11673.23	486.38	11528.40	480.35
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	15.60	0.65	-1.58	-0.07
9 OMOTOSHO GAS	GAS	3311.00	137.96	3286.70	136.95
10 OLORUNSOGO GAS	GAS	3135.25	130.64	3107.73	129.49
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	3990.21	166.26	3970.69	165.45
13 ALAOJI 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	2299.60	95.82	2288.00	95.33
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	1980.00	82.50	1964.55	81.86
18 OKPAI	GAS	6916.00	288.17	6753.40	281.39
19 AFAM VI	GAS	12680.73	528.36	12407.35	516.97
20 IBOM	GAS	2047.03	85.29	2039.00	84.96
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	9133.80	380.58	9105.62	379.40
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1873.20	78.05	1828.85	76.20
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	3266.80	136.12	3260.79	135.87
27 EGBIN ST6	STEAM	3001.00	125.04	2827.80	117.83
28 PARAS ENERGY	GAS	1671.20	69.63	1661.70	69.24
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>93,882.15</b>	<b>3,911.76</b>	<b>92,466.79</b>	<b>3,852.78</b>

1.7A GENERATION POSITION AT 06:00HRS OF WEDNESDAY 16/05/2018

	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	8	1G5, 6 & 12 3	340	310	1G5, 6 & 12 3	310	254	1G5, 6 & 12 - On frequency response. 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 - Out on maintenance.	
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1, 2 & 5 3	285	243	2G1, 2 & 5 - On frequency response. 2G3 - Out on frequency management. 2G4 - Shut down for water management. 2G6 - Out due to burnt generator winding and AVR.	
	SHIRORO HYDRO	4	411G1 - 4 4	560	560	411G1 - 4 4	560	469	411G2 - Generation reduced on frequency management.	
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	880	ST2 & 4 2	305	305	ST1 & 5 - Out on gas constraint. ST3 - Tripped on high vibration since 19th June 2017. Generation reduced due to gas constraint.	
	SAPELE (STEAM)	6	ST2 1	120	47	ST2 1	47	47	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	GT7, 9 - 13, 15, 16 & 18 - 20 11	635	635	GT7, 9 - 13, 15, 16 18 - 20 11	615	598	GT3 & 5 - Out due to generator winding fault. GT4 - Tripped on loss of excitation. GT6 & 14 - Out on major overhaul. GT15 - On frequency response. 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. GT17 - Tripped on loss of excitation. GT18 - Tripped on lube oil pressure. GT19 & 20 - Awaiting major overhaul.	
	GEREGU GAS	3	GT11 - 13 3	435	435	0 0	0	0	GT11 - 13 - Out due to gas constraint.	
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 6 - 8 4	152	140.3	GT2 - 5 - Out on gas constraint	
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 4, 6 & 8 4	152	132.4	GT2, 3, 5 & 7 - Out on gas constraint	
	NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	0 0	0	0	GT21 - 23 - Out due to gas constraint.
		SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	170.9	GT1 & 3 - On frequency response. GT2 - Shut down due to air inlet differential pressure. GT4 - Tripped on fire protection.
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	375	360	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.	
OMOTOSHO NIPP GAS		4	GT1, 2 & 4 3	375	360	GT4 1	120	105.1	GT1 & 2 - Out due to gas constraint. GT4 - On frequency response. GT3 - Shut down due to oil leakage on the unit.	
ODUKPANI NIPP		5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Tripped on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.	
IHOVBOR NIPP		4	GT3 1	112.5	112.5	GT3 1	99.2	99.2	GT1, 2 & 4 - Out on maintenance. GT3 - Manually reduced due to gas vent problem.	
GBARAIN NIPP GAS		1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Shut down due to staff on strike.	
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	375	375	GT11, 12 & ST18 3	375	305	GT11 & 12 - On frequency response. ST18 - Generation reduced due to broken spray water valve of boiler #12.	
	AZURA - EDO	3	GT11 - 13 3	459	459	GT11 - 13 3	459	405	GT11 - 13 - On frequency response.	
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	640	640	GT11 - 13 & ST 10 4	640	536	Available units on bar.	
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	102.7	GT1 & 2 - Out on fault. GT3 - On frequency response.	
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.	
	ASCO	1	0 0	0	0	0 0	0	0	GT1 - Shut down due to leakage in the furnace.	
	OMOKU GAS	6	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	75.5	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul.	
	TRANS-AMADI	4	GT1 & 2 2	50	40	0 0	0	0	GT1 & 2 - Out due to line constraint since 03/04/2018. GT3 - Out on fault. GT4 - Tripped on generator differential lockout.	
	RIVERS	1	GT1 1	180	160	GT1 1	160	145	Available unit on bar.	
	<b>SUB TOTAL</b>	<b>130</b>	<b>83</b>	<b>8286</b>	<b>8014</b>	<b>52</b>	<b>4699.2</b>	<b>4133.1</b>	Frequency = 50.24Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 16/05/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	MAX. LOAD (MW)	ST6		220	111	ST6		111	111	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	1	1			8	8			
<b>SUB TOTAL</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>290.2</b>	<b>181.2</b>	<b>9</b>	<b>181.2</b>	<b>181.2</b>		
<b>GRAND TOTAL</b>	<b>139</b>	<b>92</b>	<b>8576.2</b>	<b>8195.2</b>	<b>61</b>	<b>4,880.40</b>	<b>4,314.30</b>	Frequency = 50.24Hz.		

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 15/05/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)		REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	ON	0100HRS	17	TI 60MVA SEC OPENED DUE TO TRIPPING OF PTC EXPRESS
	PTCEXPRESS	6	1600HRS	2	TRIPPED ON INST.OC AND O/C
	SANKYO	ON	1900hrs	18	FAULTY BREAKER
	FEEDER 8	14	0800HRS	24	NIL
IKORODU	PULK IT	4	0900HRS	24	NIL
	INDUSTRIAL	19	1600HRS	24	NIL
	SPINTEX	11	1000HRS	24	NIL
	DANGOTE	4	0400HRS	24	NIL
	LAND CRAFT	15	0300HRS	24	NIL
ALAUUSA	TR4 15MVA	6	1500hrs	23	132kv load shed
	TR5 -15MVA	6.4	1100hrs	23	132kv load shed
	ALAUUSA	14.7	1100hrs	23	132kv load shed
MILAND	PTC (MARYLAND)	17	0800hrs	24	NIL
	LORDSMITH [PAPALANTO]	0.4	1100hrs	24	NIL
	<b>TOTAL LOAD</b>	<b>117.5</b>			

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	71.8	23:00	24	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF TUESDAY - 15/05/2018

COMPANY NAME	VOLTAGE LEVEL	EXPECTED CONTRACTUAL LOAD (MW)	MAX	TIME	HOUR IN SERVICE	REMARK
INNER GALAXY	132kV line	25	30	24:00	24	NIL
KAM STEEL		15	4.7	01:00	23	E/F
OLAM FLOUR MILLS	33kV feeder	3	1.3	01:00	18	E/F
LORDSMITH		3	0.4	11:00	24	NIL

**1.8 HYDROLOGICAL DATA: WEDNESDAY 16/05/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.16	99.81	365.49
TAIL WATER ELEVATION (METERS)	102	74.1	270.90
GROSS OPERATING HEAD (METERS)	<b>31.16</b>	<b>25.71</b>	<b>94.59</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	872.00	985.00	398.00
AVERAGE SPILLAGE (M3/SEC)	89.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>961</b>	<b>985</b>	<b>398</b>
COMPUTED INFLOW (M3/SEC)	72.00	1043.00	121.00
STORAGE DIFFERENTIAL	<b>-889.00</b>	<b>58</b>	<b>-277</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 TUESDAY 15/05/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	496.90	14:00	583.53	338.7	08:00
EKO	464.80	16:00	658.16	328.9	07:00
IKEJA	655.4	19:00	761.13	448.3	13:00

**2.0 GAS POSITION: WEDNESDAY 16/05/2018**

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	270	1100		416	684
DELTA (GAS)	420	915		615	300
OMOTOSHO GAS	122	336.8		152	184.8
OMOTOSHO NIPP	86.8	500		120	380
OLORUNSOGO (GAS)	122.3	336		152.3	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	150.4	500		225	275
SAPELE STEAM	48	720		47	673
AFAM IV-V	0	300		0	300
AFAM VI	220	650		640	10
GEREGU GAS	50	435		0	435
GEREGU NIPP	70	435		0	435
OKPAI (GAS/STEAM)	151	480		375	105
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	90.8	450		110	340
IBOM	81	198		115	83
ODUKPANI NIPP	0	625		0	625
<b>TOTAL</b>	<b>1884.3</b>	<b>9236.26</b>		<b>2967</b>	<b>6267.8</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

**3.0 SPINNING RESERVE FOR : TUESDAY 15/05/2018**

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

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 16/05/2018 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	
		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	Gerere NIPP	GT22	35	0	0
5	Omotosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

**4.0 UNAVAILABLE GENERATION CAPABILITY**

The unavailable generation capability for Wednesday 16/05/2018 as at 0600Hrs was = **3103.2MW.**

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Omotosho NIPP GT1 & 4	240	0	240	2751
2	Alaoji NIPP GT1, 2 & 4	360	0	360	
3	Gerere NIPP GT21 - 23	435	0	435	
4	Olorunsogo NIPP GT1 - 3	360	0	360	
5	Gerere Gas GT11 - 13	435	0	435	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Afam VI GT18	42	0	42	
8	Egbin ST1 & 5	345	0	345	
9	Omotosho Gas GT2 - 5	152	0	152	
10	Olorunsogo Gas GT2, 3, 5 & 7	152	0	152	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1671.41MMSCF OF GAS (EQUIVALENT TO 6267.8MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Trans-Amadi GT1 & 2	40	0	40	68.2
2	Ibom GT3	115	86.8	28.2	
				0	
				0	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Shiroro 411G2	150	56	94	189
2	Jebba 2G3	95	0	95	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Jebba 2G4	95	0	95	95
<b>Grand Total</b>					<b>3103.2</b>

5.0 **OUTAGES:-**

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

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

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

- 1 12:05 -12:39Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary CB was taken out for the replacement of burnt Yellow phase cable link on Oluyole 33kV bus isolator. Load loss = 0.1MW
- 2 16:20 – 19:16Hrs, Ayede/Shagamu 132kV line was taken out for safe working space to enable maintenance crew replace defective 132kV Red phase IVT at Mcpherson T/S. Load loss = 42MW

5(D) **URGENT OUTAGES:**

- 1 11:47 – 13:45Hrs, Ibadan T/S 60MVA 132/33kV transformer T2 was taken out to replace broken seal of the neutral CT and build up low SF6 gas pressure on the primary CB to normal. Load loss = 5.5MW.
- 2 12:50 – 16:02Hrs, Yenagoa/Gbarain 132kV line 1 was taken out to treat hot spot on its Yellow phase isolator clamp. Load loss = 3MW.
- 3 16:08 through 24:00Hrs, Geregu gas GT12 was shut down due to low gas pressure. Load loss = 25MW

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 ODUKPANI, 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 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).

11 (A) **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	31
OPTIC FIBRE	13	10
PLS	14	0

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

The under mentioned lines were opened on frequency control.

- 1 19:26 - 19:48Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. Load loss = 50MW. Frequency was 49.60Hz
- 2 19:13 - 19:20Hrs, Osogbo/Akure 132kV line. Load loss = 40MW. Frequency was 49.70Hz
- 3 20:33Hrs, Akangba/Isolo 132kV line 1. Load loss = 66MW. Frequency was 49.70Hz
- 4 21:21 - 21:30Hrs, Osogbo/Akure 132kV line. Load loss = 38MW. Frequency was 49.73Hz

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A2K, U2A & A1S.

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 K3U & S5B.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J, J2H & F1K.

6 **WEATHER REPORT:-** Rainfall reported at Ayede, Afam & Ihovbor

7 **INTERNATIONAL LINES:-**

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

Maximum load - 287MW at 23:00Hrs.

Minimum load - 202MW at 07:00Hrs.

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

Maximum load - 105MW at 14:00Hrs.

Minimum load - 93MW at 19:00Hrs.

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

Maximum load - 46.0MW at 21:00Hrs.

Minimum load - 11.0MW at 07:00Hrs.

8 **MISCELLANEOUS:-**

- 1 00:06Hrs, Osogbo T/S Ifo/Ondo 132kV line was restored. The line tripped at 23:54Hrs, of 14/05/2018
- 2 01:16Hrs, Jebba 2G4 was shut down on frequency management. Load loss = 65MW
- 3 06:55Hrs, Shiroro T/S placed Hold Off Tag (OF 12) on Jebba/Shiroro 330kV line (cct J7R) for continuation of optic fibre work.
- 4 09:13Hrs, Shiroro 411G2 was shut down on frequency management. Load loss = 50MW.
- 5 14:09Hrs, Delta GT19 was tied. The unit was out on frequency management.
- 6 14:12Hrs, Jebba 2G4 was tied. The unit was out on frequency management.
- 7 15:32Hrs, Geregu gas GT12 was tied. The unit was out due to gas constraint.
- 8 16:29Hrs, Omotosho NIPP GT4 was tied to swap with GT2. The unit was out due to gas constraint.
- 9 16:37Hrs, Omotosho NIPP GT2 was shut down. No load loss as 103.6MW was transferred to GT4

11 (B) **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	6	13
132kV	102	78	24

- 10 17:38Hrs, Ayede T/S 60MVA 132/33kV transformer T3 was restored. The transformer tripped at 15:16Hrs, of 14/05/2018
  - 11 17:58Hrs, Delta P/S GT16 was tied. The unit was out on frequency management.
  - 12 18:45Hrs, Shiroro P/S 411G2 was tied. The unit was out on frequency management.
  - 13 18:57Hrs, Benin T/S 330kV 75MX Reactor 6R2 was switched off on voltage control. V/P = 329/331kV
  - 14 20:51Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) was restored. The line was out on voltage control. V/P = 325/328kV.
- \*\*\*\*\* **LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.**
- \*\*\*\*\* **THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.**



**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 available reactor.

**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.

**BENIN REGION:**

- 1 Omotosho T/S 330kV, 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.

**12(C) LAGOS REGION**

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

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

- 1 (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.

**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/Iire 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 (E) 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





