

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT OF WEDNESDAY 04/09/2019

FOR: EVENTS OF SATURDAY TUESDAY 03/09/2019

EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	25,790	21:30	03/09/19
GENERATION CAPABILITY	6356.1	-do-	-do-
UNIT'S ON BAR CAPABILITY AT PEAK	5039	-do-	-do-
PEAK GENERATION	4129.2	-do-	-do-
LOWEST GENERATION	2844.4	17:00	03/09/19
8-HOURLY DURATION PEAK	3261.8	0100-0800	-do-
	3734.8	0900-1600	-do-
	4129.2	1700-2400	-do-
PEAK GENERATION TO DATE	5375	21:30	7/2/2019
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	06:00	14/04/2014
MAXIMUM ENERGY GENERATED (MWH) TO DATE	111,004.89	0000-2400	03/04/2019

1.2 CRITICAL VOLTAGE

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	330		
STATUTORY LIMITS	280.5 - 346.6		
HIGHEST VOLTAGE FOR THE DAY	353	Ugwuaji & Lokoja T/S	05:00 & 17:00
LOWEST VOLTAGE FOR THE DAY	295	Gombe T/S	12:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.84	02:31
LOWEST FREQUENCY	49.99	06:29

1.4 SYSTEM COLLAPSE UPDATE

Date of last total collapse: 30th August, 2019		No. of days since last total collapse: 04												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 500												
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 243												
	Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total	
2010	Total	---	3	1	--	3	3	--	2	2	1	4	22	
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	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	0	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	22
	Partial	--	--	--	--	--	--	--	--	2	0	0	0	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	1	0	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	0	0	0	6
2017	Total	5	3	0	3	1	1	0	0	1	1			15
	Partial	1	0	1	0	0	0	1	0	3	3			9
2018	Total	5	1	0	0	0	1	1				2		12
	Partial	0	0	0	1	0			0					1
2019	Total	4	1		1	1			1					9
	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	260	234		
2	JEBBA	HYDRO	443	258		
3	SHIRORO	HYDRO	573	406		
4	EGBIN ST2 - 5	STEAM	437	259		
5	SAPELE	STEAM	0	0		
6	DELTA	GAS	353	268		
7	AFAM IV-V	GAS	30	30		
8	GEREGU GAS	GAS	257	100		
9	OMOTOSHO GAS	GAS	136.1	122.3		
10	OLORUNSOGO GAS	GAS	127.80	109.2		
11	GEREGU NIPP	GAS	100	99		
12	SAPELE NIPP	GAS	84.6	74.6		
13	ALAOJI NIPP	GAS	0	0		
14	OLORUNSOGO NIPP	GAS	0	0		
15	OMOTOSHO NIPP	GAS	74.7	75.6		
16	ODUKPANI NIPP	GAS	172.1	95.1		
17	IHOVBOR NIPP	GAS	79.9	0		
18	OKPAI	GAS	196	152		
19	AFAM VI	GAS	236	117		
20	IBOM POWER	GAS	67	62.8		
21	ASCO	GAS	0	0		
22	A.E.S	GAS	0	0		
23	OMOKU	GAS	70.2	55.4		
24	TRANS AMADI	GAS	25.3	38.7		
25	RIVERS IPP	(GAS)	80	80		
26	AZURA - EDO IPP	(GAS)	261	150		
27	EGBIN ST6	(GAS)	0	0		
28	PARAS ENERGY	(GAS)	65.5	57.7		
29	GBARAIN NIPP	GAS	0	0		
<b>TOTAL</b>			<b>4129.2</b>	<b>2844.4</b>		
1.6 6025						
STATION	TURBINE	ENERGY GENERATED MWH	AV. POWER GENERATED MWHH	ENERGY SENT OUT MWH	AV. POWER SENT OUT MWHH	
1	KAINJI	HYDRO	7001.00	291.71	6985.70	291.07
2	JEBBA	HYDRO	6987.00	291.13	6967.28	290.30
3	SHIRORO	HYDRO	11407.00	475.29	11384.99	474.37
4	EGBIN ST2 - 5	STEAM	7890.00	328.75	7397.30	308.22
5	SAPELE	STEAM	0.00	0.00	0.00	0.00
6	DELTA	GAS	8170.89	340.45	7953.20	331.38
7	AFAM IV-V	GAS	1058.49	44.10	1053.61	43.90
8	GEREGU GAS	GAS	3650.60	152.11	3626.95	151.12
9	OMOTOSHO GAS	GAS	2761.00	115.04	2740.90	114.20
10	OLORUNSOGO GAS	GAS	3160.75	131.70	3139.68	130.82
11	GEREGU NIPP	GAS	2423.50	100.98	2410.91	100.45
12	SAPELE NIPP	GAS	2331.77	97.16	2319.36	96.64
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	1752.90	73.04	1733.50	72.23
16	ODUKPANI NIPP	GAS	3173.95	132.25	3145.25	131.05
17	IHOVBOR NIPP	GAS	1800.00	75.00	1782.80	74.28
18	OKPAI	GAS	3623.00	150.96	3554.30	148.10
19	AFAM VI	GAS	3593.77	149.74	3476.60	144.86
20	IBOM	GAS	1551.18	64.63	1542.00	64.25
21	ASCO	GAS	0.00	0.00	0.00	0.00
22	AZURA - EDO IPP	GAS	4449.95	185.41	4427.00	184.46
23	A.E.S	GAS	0.00	0.00	0.00	0.00
24	OMOKU	GAS	1424.62	59.36	1384.29	57.68
25	TRANS AMADI	GAS	893.00	37.21	871.70	36.32
26	RIVERS IPP	GAS	2573.10	107.21	2562.50	106.77
27	EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28	PARAS ENERGY	GAS	1370.50	57.10	1364.20	56.84
29	GBARAIN NIPP	GAS	290.00	12.08	282.20	11.76
<b>TOTAL</b>			<b>83,337.97</b>	<b>3,472.42</b>	<b>82,106.22</b>	<b>3,421.09</b>

	STATIONS	NO OF UNITS INSTALLED	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS (MW) AT 50.36Hz	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	330	1G5, 6, 11 & 12 4	330	189	1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 1G9 - Out due to burnt 7.5MVA 33/0.415kV & 183.6MVA 16/330kV station service transformer and generator transformer. 1G10 - Shut down due to thrust bearing temperature problem. GT 11 & 12 - Generation reduced due to low load demand by the Discos.
	JEBBA HYDRO	6	2G1 - 5 5	578.4	475	2G1, 3 & 5 3	285	219	2G2 & 4 - Out due to low load demand by the Discos. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 3 3	450	260	411G1 & 2 - Generation reduced due to low load demand by the Discos. 411G4 - Shut down due to low load demand by the Discos.
	EGBIN STEAM	6	ST1, 2, 5 & 6 4	880	655	ST1 & 5 2	430	170	ST2 & 6 - Out due to low load demand by the Discos. ST3 - Tripped on suspected control valve abnormal. ST4 - Out due to boiler feed pump problem. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Tripped due to loss of control oil pump. ST2 & 4 - Out on fault. ST3 - Yet to be tied since collapse of 30/08/2019.
	DELTA (GAS)	18	GT6, 10 - 13, 15 16, 19 & 20 10	575	520	GT6, 10 - 11, 13, 16, 19 & 20 8	410	336	GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT7 & 15 - Out due to low load demand by the Discos. GT8 & 14 - Out on major overhaul. GT12 & 15 - Out due to low load demand by the Discos. GT17 & 18 - Out due to generator lockout problem.
	AFAM IV & V (GAS)	8	GT18 1	120	50	GT18 1	50	30	GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 Out due to gas constraint. GT18 - Generation reduced due to low load demand by the Discos. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 1	145	100	GT12 - Generation reduced due to low load demand by the Discos. GT11 & 13 - Out due to low load demand by the Discos.
	OMOTOSHO GAS	8	GT1, 4, 5, 7 & 8 5	210	190	GT4, 5 & 8 3	114	76.2	GT1 & 7 - Out due to low load demand by the Discos. GT2, 3 & 6 - Out on gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	306	GT2, 4, 6 & 7 4	152	84.3	GT1, 3, 5 & 8 - Out due to low load demand by the Discos.
NIPP	GEREGU NIPP	3	GT21 1	145	145	GT21 1	145	100	GT21 - Generation reduced due to low load demand by the Discos. GT22 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT2 1	112.5	110	GT2 1	110	90.1	GT1 & 3 - Out due to gas constraint. GT4 - Out on maintenance.
	ALAOJI NIPP	4	GT1 1	120	110	0 0	0	0	GT1 - Out due to low load demand by the Discos. GT2 - Out due to high air inlet differential pressure. GT3 - Out due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	0 0	0	0	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP	4	GT2 1	120	120	GT2 1	120	70.9	GT1 - Out on maintenance. GT3 - Out due to gas constraint. Generation reduced due to low load demand by the Discos
	ODUKPANI NIPP	5	GT1 - 4 4	480	440	GT1 1	110	97.9	GT1 - On manual adjustment. GT2, 3 & 4 - Out due to low load demand by the Discos. GT5 - Out on E/F.
	IHOVBOR NIPP	4	GT2 1	112.5	110	GT2 1	110	80.9	GT1 - On manual adjustment. GT3 & 4 - Out on maintenance.
	GBARAIN NIPP	1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Out due to tripping of Owerrri/Ahoada 132kV lines 1 & 2.
	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	104	GT11 & 12 - Generation reduced due to low load demand by the Discos. ST18 - Out on fault.
	AZURA - EDO	3	GT11 - 13 3	461	459	GT13 1	306	75	GT11 & 12 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos.
IPP	AFAM VI GAS/STEAM	4	GT12, 13 & ST10 3	500	470	GT13 1	150	119	GT11 - Tripped on undisclosed fault. GT12 & ST10 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos
	IBOM POWER GAS	3	GT3 1	112.5	110	GT3 1	110	64.4	GT1 & 2 - Out due to fire outbreak on the control panel. Generation reduced due to low load demand by the Discos.
	AES	9	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Out due to leakage in the furnace.
	OMOKU GAS	6	GT3 - 6 4	100	80	GT3 - 6 4	80	42.6	GT1 - Tripped on exhaust spread temperature high. GT2 - Out on high vibration. Generation reduced due to low load demand by the Discos.
	TRANS-AMADI	4	GT2 & 4 2	50	40	GT2 & 4 2	35.5	35.5	GT1 - Tripped on high voltage. GT3 - Out on generator transformer limitation.
	RIVERS	1	GT1 1	160	160	GT1 1	160	30	GT1 - Generation reduced due to low load demand by the Discos.
	SUB TOTAL	141	70	7060.4	6327.5	46	4102.5	2374.8	Frequency = 50.36Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 04/09/2019 FOR UNITS ON BILATERAL AGREEMENT										
PARAS ENERGY	8	GT3 - 10		70	53.7	GT3 - 10		53.7	53.7	Available units on bar.
		8				8				
SUB TOTAL	8			70	53.7			53.7	53.7	
GRAND TOTAL	149	78		7130.4	6381.2	54		4,156.20	2428.5	Frequency = 50.36Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 03/09/2019								
EGBIN ST6 5MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY								
FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK	
OGBA	U-STEEL	1	0200HRS			22	DUE TO BURNT BQ BUS ISOLATOR BOLT & NUT CLAMP	
	PTC EXPRESS	6	0900HRS			16	DUE TO TRIPPING ON THE FDR	
	SANKYO	1	0100HRS			24	NIL	
	FEEDER 8	12	2000HRS			24	NIL	
IKORODU	PULK IT	1	0200HRS			24	NIL	
	INDUSTRIAL	8	0900HRS			24	NIL	
	SPINTEX	3	0800HRS			24	NIL	
	DANGOTE	3	0100HRS			24	NIL	
	LAND CRAFT	2	0500HRS			24	NIL	
ALAUISA	TR4 - 15MVA	6	1000HRS			24	NIL	
	TR5 -15MVA	5	1000HRS			24	NIL	
	ALAUISA	14.8	1200HRS			24	NIL	
M/LAND	PTC (MARYLAND)	17	1900HRS			22	TRIPPED ON E/F	
	<b>TOTAL LOAD</b>	<b>79.8</b>						

BILATERAL AGREEMENT LOAD DISPATCH							
60MW PARAS ENERGY GENERATION TO CEB OF TUESDAY 03/09/2019							
	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
	65.7	22:00	51.3	05:00	24:00	1368	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI TUESDAY 03/09/2019									
COMPANY NAME	VOL-TAGE LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME	MIN LOAD (MW)	TIME	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	ON	ON	ON	ON	ON	ON	ON
KAM STEEL 2		25.0	22	13:00	0.1	04:00	24	<b>111.6</b>	NO TIME OUT
ASHAKA CEMENT		0	11.9	10:00	6.3	03:00	24	<b>222</b>	NO TIME OUT
XING 1	33kV feeder	0	12.6	03:00	1.2	19:00	24	<b>112.5</b>	NO TIME OUT
XING 2		0	16.1	06:00	0.6	23:00	24	<b>140.1</b>	NO TIME OUT
KAM INTEGRATED		15	5	13:00	2.0	09:00	24	<b>72.8</b>	NO TIME OUT
OLAM FLOUR MILLS		3	1.9	20:00	0.7	09:00	24	<b>25.1</b>	NO TIME OUT
LORDSMITH		3	0.3	01:00	0.3	02:00	24	<b>7.2</b>	NO TIME OUT
KAM STEEL LINE 1		0	8	13:00	1.3	09:00	24	<b>64.2</b>	NO TIME OUT

1.8 HYDROLOGICAL DATA: WEDNESDAY 04/09/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	137.22	102.90	376.06
TAIL WATER ELEVATION (METERS)	104.96	74.9	274.0
GROSS OPERATING HEAD (METERS)	32.26	28.00	105.06
AVERAGE TURBINE DISCHARGE (M3/SEC)	1011.00	1156.00	516.00
AVERAGE SPILLAGE (M3/SEC)	162.00	669.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1173.00	1825.00	516.00
COMPUTED INFLOW (M3/SEC)	2330.00	2068.00	874.00
STORAGE DIFFERENTIAL	1157.00	243	358
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355.00

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT TUESDAY 03/09/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	494.5	10:00	528.21	338.6	18:00
EKO	552.2	23:00	605.24	313.4	19:00
IKEJA	600.9	22:00	788.97	419.9	05:00

2.0 GAS POSITION: WEDNESDAY 04/09/2019

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCF/D)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EGBIN P/S	265	1100		430	670
DELTA (GAS)	305	915		410	505
OMOTOSHO GAS	100.4	336.8		114	222.8
OMOTOSHO NIPP	104.3	500		120	380
OLORUNSOGO (GAS)	233.4	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	87.2	500		110	390
SAPELE STEAM	47	720		0	720
AFAM IV-V	50	300		50	250
AFAM VI	220	650		150	500
GEREGU GAS	216	435		145	290
GEREGU NIPP	80	435		145	290
OKPAI (GAS/STEAM)	170	480		300	180
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	114	337.5		110	227.5
IBOM	88.9	198		110	88
ODUKPANI NIPP	206.4	625		110	515
<b>TOTAL</b>	<b>2287.6</b>	<b>9122.30</b>		<b>2456</b>	<b>6666.3</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : TUESDAY 03/09/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 04/09/2019 = FREQUENCY = 50.36Hz.

SN	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	Geregu 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 UN-UTILIZED GENERATION CAPABILITY

The un-utilized generation capability for Wednesday 04/09/2019 as at 0600Hrs = 3631.6MW

SN	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO LINE CONSTRAINTS</b>					
1	Gbarin NIPP GT2	110	0	110	110
<b>4.2 DUE TO LOW LOAD DEMAND BY THE DISCS</b>					
1	Jebba 2G2 & 4	190	0	190	3366
2	Olorunsogo gas GT1 - 8	306	84.3	221.7	
3	Geregu Gas GT11 - 13	435	100	335	
4	Odukpani NIPP GT2, 3 & 4	330	0	330	
5	Azura-Edo GT11 - 13	459	75	384	
6	Egbin ST1, 2, 4 & 6	655	170	485	
7	Shiroto 411G1, 2 & 4	450	110	340	
8	Okpai GT11 & 12	300	104	196	
9	Afam VI GT12, 13 & ST10	470	119	351	
10	Delta GT7, 15, 16, 19 & 20	378	240	138	
11	Omotosho Gas GT1, 4, 5, 7 & 8	190	76.2	113.8	
12	Afam IV GT18	50	30	20	
13	Geregu NIPP GT21	145	100	45	
14	Omotosho NIPP GT3	120	70.9	49.1	
15	Omoku GT3-6	80	42.6	37.4	
16	Rivers IPP GT1	160	30	130	
17	Aaoji nipp GT1	110	0	110	
18	Ibom Power GT3	110	64.4	45.6	
					0
<b>4.3 DUE TO WATER MANAGEMENT</b>					
					0
					0
					0
<b>Grand Total</b>					<b>3631.6</b>

5.0 **OUTAGES:**

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

- 1 04:06 through 24:00Hrs, Gbarain GT2 tripped due to the tripping of Alaoji/Owerri 132kV line 2. LHR = 71MW
- 2 06:27 - 20:25Hrs, Jebba 2G5 tripped on emergency shut down relay. Load loss = 85MW
- 3 14:33 - 18:19Hrs, Ihovbor GT2 tripped on master trip relay. LHR = 90.2MW

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

- 1 04:06Hrs, Owerri/Ahoada 132kV lines 1 & 2 CBs tripped at Owerri T/S on DEF & E/F respectively. Total LHR = 50MW  
05:05Hrs, Line 1 was restored. 05:06Hrs, line 2 was restored.
- 2 14:33 - 14:44Hrs, Osogbo/Ihovbor 330kV line (cct H7V) CBs tripped at both ends on the following relay indications:  
**At Osogbo T/S:**  
Ohmega relay – Zone 2 phase C, Earth, DEF forward, 86 ABC & T/2, distance = 111.04km  
ABB relay: Start L3 & PE fuse VTSZ  
**At Ihovbor T/S:**  
Micom relay – Main distance protection, started phase C-N, O/C start I>1, E/F start IN>1, fault location = 131.41km, master trip relay MVAJ 3-phases. Load of 222.3MW was diverted to cct V7B
- 3 14:54 - 15:32Hrs, Benin/Asaba 330kV line (cct B3D) CBs tripped at both ends on the following relay indications:  
**At Benin T/S:**  
Siprotec relay – Zone 1 trip, distance pickup L3E, PU time = 1549ms, trip time = 1458ms, distance = 53.4km, E/F L3, earth fault forward.  
**At Asaba T/S:**  
SEL relay – O/C Blue phase and E/F zone 1. LHR = 18MW
- 4 16:37 through 24:00Hrs, Asaba 150MVA 330/132/33kV Transformer TR2 primary & secondary CBs tripped.  
**On primary CB:** O/C Red & Blue phases  
**On secondary CB:** Tripped without relay indication. LHR = 18MW
- 5 20:18 - 20:45Hrs, Calabar T/S 60MVA 132/33kV Transformer T1 primary & secondary CBs tripped on O/C & E/F. LHR = 28MW
- 6 20:18 - 20:45Hrs, Adilabor/Calabar 132kV line 1 CB tripped at Adilabor T/S on E/F. LHR = 28MW

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

- 1 11:35 - 20:20Hrs, Aja T/S 30MVA 132/33kV Transformers TR2/3 primary CB common was taken out to enable maintenance crew carry out preventive maintenance on the Transformer and their associated equipment. Load loss = 12MW
- 2 13:40 - 16:58Hrs, Ikeja-West/Otta 132kV line 1 CB was taken out to allow MBH Contractor to create an interlocking scheme. No load loss as 48MW was transferred to line 2.
- 3 17:01 - 18:35Hrs, Ikeja-West/Otta 132kV line 2 CB was taken out to allow MBH Contractor to create an interlocking scheme. No load loss as 49MW was transferred to line 1.

5 (D) **URGENT OUTAGES**

- 1 15:44 - 17:12Hrs, Alaoji/Aba 132kV line was taken out to enable maintenance crew work on 110DC battery charger at Aba T/S. Load loss = 40MW

6 **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 WITH EFFECTIVE POWER PURCHASE AGREEMENT (PPA)

GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.

GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.

GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED FOR THE ANCILLARY SERVICE).

GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).

GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

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

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

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts U1A,K3U, B11J & K1U.

5 (H) **330KV LINES THAT ARE OUT DUE TO DEFECTIVE CIRCUIT BREAKER:-** cct A2K.

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts A2K & K4U

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

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

6 **WEATHER REPORT:-** Rainfall was reported at Osogbo, Ajaokuta, Lokoja, Kaduna, Jos

7 **INTERNATIONAL LINES:-**

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

Maximum load - 81MW at 20:00Hrs.

Minimum load - 54.0MW at 14:00Hrs.

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

Maximum load - 121MW at 15:00Hrs.

Minimum load - 103.0MW at 08:00Hrs.

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

Maximum load - 45.8MW at 20:00Hrs.

Minimum load - 31MW at 11:00Hrs.

11A **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	38	30
OPTIC FIBRE	13	11
PLS	14	4

11B **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	5	14
132kV	102	81	21

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

**SHIRORO REGION:**

- 1 Birnin Kebbi 75MX Reactor R1.

**ABUJA REGION**

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

**KADUNA REGION:**

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

**BAUCHI REGION:**

- 1 Gombe T/S - 30MX Reactor R2A.

**ENUGU REGION:**

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

**LAGOS REGION:**

- 1 Oke-Aro T/S: 75MX Reactor R1.

**PORT HARCOURT REGION**

- 1 Ikot-Ekpene T/S: No reactor installed.

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

**LAGOS REGION:**

- Akangba T/S. 132kV Bus Coupler CB - Serious Air leakage.(Undergoing repair)
- Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- Otta/Ogba 132kV line isolator - defective control shaft.
- Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole .
- Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- Egbin/Oke-Aro 330kV line 2 (N8K) Defective. Needs replacement.
- Egbin/Ikeja-West Tie CB Defective. Needs replacement.
- Egbin/Aja 330kV line 3 (cct N3J) - Tie CB defective.Needs replacement.

**BENIN REGION:**

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

**PORT HARCOURT REGION:**

8 **MISCELLANEOUS**

- 00:07 - 06:27Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 75MW
  - 00:11 through 24:00Hrs, Olorunsogo GT5 was shut down due to low load demand by the Discos. Load loss = 30.5MW
  - 00:13 - 19:45Hrs, Delta GT15 was shut down due to low load demand by the Discos. Load loss = 70MW
  - 00:55Hrs, Omotosho NIPP GT2 was tied. The unit was out due to low load demand by the Discos.
  - 10:14Hrs, Jebba 2G4 was tied. The unit was out due to low load demand by the Discos.
  - 10:38Hrs, Odukpani NIPP GT2 was tied. The unit was out due to low load demand by the Discos.
  - 10:46Hrs, Geregu GT12 was tied. The unit was out due to low load demand by the Discos.
  - 12:01Hrs, Omotosho gas GT7 was tied. The unit was out due to low load demand by the Discos.
  - 12:36Hrs, Afam VI GT12 was tied. The unit was out due to low load demand by the Discos.
  - 12:48 - 17:33Hrs, Jebba 2G3 was shut down due to low load demand by the Discos. Load loss = 75MW
  - 15:43Hrs, Oke-Aro T/S 60MVA 132/33kV Transformer T6 was restored. The Transformer tripped at 03:58Hrs of 02/09/2019
  - 16:24 - 20:30Hrs, Odukpani GT2 was shut down due to low load demand by the Discos. Load loss = 82.0MW
  - 16:27 - 20:54Hrs, Afam VI GT12 was shut down due to low load demand by the Discos. Load loss = 110MW
  - 16:29 - 18:51Hrs, Geregu gas GT13 was shut down due to low load demand by the Discos. Load loss = 80MW
  - 17:15 through 24:00Hrs, Delta GT7 was shut down due to low load demand by the Discos. Load loss = 16MW
  - 17:30Hrs, Delta GT12 was tied for test.
  - 17:34 - 19:09Hrs, Jebba 2G2 was shut down due to unavailability of auxiliary service on the unit. Load loss = 88MW
  - 20:44 - 21:56Hrs, Delta GT15 was shut down due to low load demand by the Discos. Load loss = 90MW
  - 23:13 through 24:00Hrs, Jebba 2G4 was shut down due to low load demand by the Discos. Load loss = 70MW
  - 23:32 through 24:00Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 70MW
- \*\*\*\* THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.
- \*\*\*\* LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.

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.

12(E) **UNAVAILABLE SKYWIRES**

**LAGOS REGION**

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

**SHIRORO REGION**

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

**ABUJA REGION**

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

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- 1 Ikeja West, Onitsha, Egbin, Ugwuaji, Jos, Gwagwalada & Alaoji T/S.

**FOR MORE INFORMATION: NCC Telephone Lines -**

- 1 Ikeja West, Onitsha, Egbin, Ugwuaji, Jos, Gwagwalada & Alaoji T/S.

1 cct A1K CB

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

**SHIRORO REGION**

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

**ABUJA REGION**

- 1 Gwagwalada/Katampe 330kV line CB cct J5B - Faulty breaker at Gwagwalada T/S

**FOR MORE INFORMATION: NCC Telephone Lines -**

- a PAX 09/300, 309, 303 & 305.
- b NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
- c PLS - 622
- d GM (NCC) - 08036744641.
- e AGM (S/O) - 08105894708, CUG: 07016228668
- f NCC e-mail address - nationalcontrol@gmail.com
- g SYSTEM OPERATIONS WEB SITE: [www.nigeriasystemoperator.org](http://www.nigeriasystemoperator.org).

**CRITICAL VOLTAGE NODES IN THE GRID**

S/N	NODE	VOLTAGE	REMARKS
1	Lokoja T/S	353kV	One Reactor in service.
2	Ugwuaji T/S	353kV	No Reactor
3	New Haven T/S	352kV	No Reactor
4	Sapele T/S	351kV	Low VAR absorption by Sapele P/S & NIPP
5	Alaoji T/S	350kV	One Reactor in service.
6	Onitsha T/S	350kV	One Reactor in service.