

# TRANSMISSION COMPANY OF NIGERIA

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

**DAILY OPERATIONAL REPORT OF FRIDAY 22/02/2019**  
**FOR: EVENTS OF THURSDAY 21/02/2019**

## 1.0 EXECUTIVE OPERATIONS SUMMARY:

### 1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,960	22:00	21/02/2019
GENERATION CAPABILITY	5615.5	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5287.7	-do-	-do-
PEAK GENERATION	4795.5	-do-	-do-
LOWEST GENERATION	4172.1	15:00	21/02/2019
8-HOURLY DURATION PEAK	4598.7	0100-0800	-do-
	4546.6	0900-1600	-do-
	4795.5	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	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	342	Birnin-Kebbi T/S	07:00
LOWEST VOLTAGE FOR THE DAY	298	Sakete T/S	02:00

## 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.34	07:05
LOWEST FREQUENCY	49.76	09:09

## 1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Feb., 2019		No. of days since last total collapse: 02											
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 314											
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	3	--	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	1
2011	Total	--	--	--	--	4	3	1	1	--	1	--	13
	Partial	--	1	--	--	--	--	--	1	--	--	--	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	0	1	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	0	0	1	0	6
	Partial	--	--	1	0	2	0	0	0	1	0	0	4
2016	Total	--	--	2	3	6	5	0	0	1	1	2	22
	Partial	--	--	1	0	1	3	1	0	0	0	0	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	--	--	--	1	11
	Partial	0	0	0	1	0	--	--	0	--	--	--	1
2019	Total	4	1	--	--	--	--	--	--	--	--	--	4
	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	395	261
2 JEBBA	HYDRO	381	342
3 SHIRORO	HYDRO	290	199
4 EGBIN ST2 - 5	STEAM	486	506
5 SAPELE	STEAM	60	61
6 DELTA	GAS	346	328
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	277	258
9 OMOTOSHO GAS	GAS	133.7	123.5
10 OLORUNSOGO GAS	GAS	184.8	189.3
11 GEREGU NIPP	GAS	280	264
12 SAPELE NIPP	GAS	99.2	84.9
13 ALAQJI NIPP	GAS	109.7	104.1
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	110.1	103.6
16 ODUKPANI NIPP	GAS	417.7	352.1
17 IHOVBOR NIPP	GAS	96.7	99.2
18 OKPAI	GAS	195	155
19 AFAM VI	GAS	282	129
20 IBOM POWER	GAS	33.1	32.1
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	53.7	53.7
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	437	398
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	67.8	68.6
29 GBARAIN NIPP	GAS	0	0
<b>TOTAL</b>		<b>4795.5</b>	<b>4172.1</b>

  

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED	AV. ENERGY GENERATED	ENERGY SENT OUT	AV. ENERGY SENT OUT
		MWH	MWHH	MWH	MWHH
1 KAINJI	HYDRO	9400.00	391.67	9382.70	390.95
2 JEBBA	HYDRO	7998.00	333.25	7974.52	332.27
3 SHIRORO	HYDRO	5813.00	242.21	5787.44	241.14
4 EGBIN ST2 - 5	STEAM	11982.00	499.25	11313.20	471.38
5 SAPELE	STEAM	867.80	36.16	789.10	32.88
6 DELTA	GAS	7998.71	333.28	7899.10	329.13
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	6363.50	265.15	6334.51	263.94
9 OMOTOSHO GAS	GAS	3153.00	131.38	3128.70	130.36
10 OLORUNSOGO GAS	GAS	4604.63	191.86	4571.87	190.49
11 GEREGU NIPP	GAS	7908.50	329.52	7884.11	328.50
12 SAPELE NIPP	GAS	2296.00	95.67	2276.70	94.86
13 ALAQJI NIPP	GAS	2454.31	102.26	2445.27	101.89
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2572.20	107.18	2549.00	106.21
16 ODUKPANI NIPP	GAS	8090.68	337.11	8051.98	335.50
17 IHOVBOR NIPP	GAS	2300.00	95.83	2280.17	95.01
18 OKPAI	GAS	2585.00	107.71	2477.50	103.23
19 AFAM VI	GAS	3817.51	159.06	3718.38	154.93
20 IBOM	GAS	2101.11	87.55	2092.00	87.17
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	9901.65	412.57	9870.60	411.28
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1326.20	55.26	1296.95	54.04
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1607.00	66.96	1599.20	66.63
29 GBARAIN NIPP	GAS	1151.00	47.96	1140.00	47.50
<b>TOTAL</b>		<b>106,291.80</b>	<b>4,428.83</b>	<b>104,863.00</b>	<b>4,369.29</b>

1.7A GENERATION POSITION AT 06:00HRS OF FRIDAY 22/02/2019

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 50.20Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	1G5, 6, 11 & 12	440	440	1G5, 6, 11 & 12	440	379	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.
		4			4			
	JEBBA HYDRO	2G1 - 4	384	374	2G1, 3 & 4	253	253	2G2 - Out due to low load demand by the Discos. 2G5 - Out for annual maintenance. 2G6 - Out due to burnt generator winding and AVR.
		4			3			
	SHIRORO HYDRO	411G1 & 4	300	300	411G1 & 4	300	110	411G1 & 4 - Generation reduced due to low load demand by the Discos.. 411G2 - Out due to shear pin problem. 411G3 - Out due to radiators oil leakage.
		2			2			
	EGBIN STEAM	ST1, 2, 4 & 5	880	491	ST1, 2, 4 & 5	491	491	ST1, 2, 4 & 5 - Generation reduced due to gas constraints. GT3 - Out due to technical problems. GT6 - Out on gas constraints.
		4			4			
	SAPELE (STEAM)	ST3	120	60	ST3	60	60	ST1 & 2 - Tripped on high vibration. ST4 - Out on fault. ST5 - Awaiting major overhaul.
		1			1			
DELTA (GAS)	GT6, 7, 10 - 13, 15, 16 & 20	475	350	GT6, 7, 10 - 13, 15, 16 & 20	350	350	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT8 & 14 - Out on major overhaul. GT9 - Out due to gas constraint. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. GT19 - Out on gas constraints. Generation limited to 336MW by NGC.	
	9			9				
AFAM IV & V (GAS)	0	0	0	0	0	0	GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 & 18 - Out due to gas constraint. GT19 & 20 - Awaiting major overhaul.	
	0			0				
GEREGU GAS	GT11 - 13	435	435	GT11 & 12	290	213	GT12 - Out due to line constraints. GT13 - Generation reduced due to low load demand by the Discos.	
	3			2				
OMOTOSHO GAS	GT1, 2, 4 & 7	168	136.2	GT1, 2, 4 & 7	136.2	136.2	GT3, 5, 6 & 8 - Out due to gas constraint.	
	4			4				
OLORUNSOGO GAS	GT1, 2, 4, 5, 7 & 8	252	184.5	GT1, 2, 4, 5, 6 & 7	184.5	184.5	GT3 & 5 - Out due to gas constraint.	
	6			6				
NIPP	GEREGU NIPP	GT21 - 23	435	435	GT21 & 22	290	237	GT22 - Generation reduced due to low load demand by the Discos. GT23 - Out due to line constraints.
		3			2			
	SAPELE NIPP	GT1	112.5	112.5	GT1	112.5	92.5	GT2 - Out due to leakage on the vent line. GT3 - Out due to gas constraint. GT4 - Out due to high air inlet differential pressure.
		1			1			
	ALAOJI NIPP GAS	GT1	120	112.5	GT1	112.5	80.8	GT2 - Out due to gas constraint. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
		1			1			
	OLORUNSOGO NIPP	0	0	0	0	0	0	GT1, 2 & 3 - Shut down due to low gas pressure. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
		0			0			
	OMOTOSHO NIPP GAS	GT2	125	120	GT2	120	107.5	GT1 - Out on maintenance. GT3 & 4 - Out due to gas constraint.
		1			1			
ODUKPANI NIPP	GT1 - 5	575	575	GT1, 3 & 4	345	300	GT2 & 5 - Out due to low load demand by the Discos.	
	5			3				
IHOVBOR NIPP	GT1	112.5	112.5	GT1	112.5	91.4	GT1 - On manual adjustment to frequency. GT2 & 4 - Out due to gas constraints. GT3 - Tripped on high vibration.	
	1			1				
GBARAIN NIPP GAS	0	0	0	0	0	0	GT2 - Out due to gas constraints.	
	0			0				
IPP	OKPAI GAS/STEAM	GT12 & ST18	220	186	GT12 & ST18	186	186	GT11 - Out on maintenance. Available units on bar.
		2			2			
	AZURA - EDO	GT11 - 13	461	461	GT11 - 13	461	351	GT12 - Generation reduced due to low load demand by the Discos.
		3			3			
	AFAM VI GAS/STEAM	GT11 & 13	300	300	GT11 & 13	300	265	GT12 & ST10 - Out due to gas constraint.
		2			2			
	IBOM POWER GAS	GT3	120	115	GT3	115	91.1	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Generation reduced due to line constraint.
		1			1			
	AES	0	0	0	0	0	0	Out of production since 27/09/2014.
		0			0			
ASCO	0	0	0	0	0	0	ST1 - Shut down due to leakage in the furnace.	
	0			0				
OMOKU GAS	GT1, 3 & 5	75	54.4	GT1, 3 & 5	54.4	54.4	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.	
	3			3				
TRANS-AMADI	0	0	0	0	0	0	GT1, 2 & 4 - Out due to gas constraint. GT3 - Out on fault.	
	0			0				
RIVERS	0	0	0	0	0	0	GT1 - Out due to gas constraint.	
	0			0				
SUB TOTAL	141	60	6110	5354.6	55	5726.1	4033.4	Frequency = 50.20Hz.

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 22/02/2019 FOR UNITS ON BILATERAL AGREEMENT									
	PARAS ENERGY	8	GT3 -10	70	65.4	GT3 -10	65.4	65.4	Available units on bar.
			8			8			
	SUB TOTAL	8	8	70	65.4	8	65.4	65.4	
	GRAND TOTAL	149	68	6180	5420	63	5,791.50	4,098.80	Frequency = 50.20Hz

1.7C BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 21/02/2019								
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	ON	0100HRS		24		NIL	
	PTC EXPRESS	ON	0100HRS		24		NIL	
	SANKYO	5	1400HRS		23		LOAD SHEDDING ON 132KV CIRCUIT	
	FEEDER 8	18	1000HRS		23		LOAD SHEDDING ON 132KV CIRCUIT	
IKORODU	PULK IT	6	0600HRS		24		NIL	
	INDUSTRIAL	9	0800HRS		24		NIL	
	SPINTEX	14	2300HRS		24		NIL	
	DANGOTE	3	0100HRS		24		NIL	
	LAND CRAFT	22	2300HRS		24		NIL	
ALAUSA	TR4 15MVA	8.3	15:00HRS		24		NIL	
	TR5 -15MVA	6.9	1200HRS		24		NIL	
	ALAUSA	15.2	0800HRS		24		NIL	
MLAND	PTC (MARYLAND)	20	2000HRS		24		NIL	
	<b>TOTAL LOAD</b>							

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF THURSDAY 21/02/2019							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	68.6	09:00	64.6	02:00	24	1607	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI THURSDAY 21/02/2019									
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	44	01:00	20	07:00	24	<b>832</b>	SUPPLY NOT INTERRUPTED
KAM STEEL		25.0	14	12:00	1	05:00	24	<b>99.3</b>	SUPPLY NOT INTERRUPTED
ASHAKA CEMENT		0	10.7	18:00	5	12:00	24	<b>197.1</b>	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	20.2	22:00	0.1	20:00	24	<b>194.6</b>	SUPPLY NOT INTERRUPTED
XING 2		0	3:36	05:00	0.1	09:00	24	<b>182.45</b>	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	2.6	18:00	1.3	23:00	24	<b>44.4</b>	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	2.1	10:00	2:24	12:00	24	<b>43.1</b>	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.7	01:00	0.6	24:00	24	<b>15.2</b>	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: FRIDAY 22/02/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.72	103.13	372.63
TAIL WATER ELEVATION (METERS)	105.2	73.8	27.0
GROSS OPERATING HEAD (METERS)	<b>36.52</b>	<b>29.33</b>	<b>345.63</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	1177.00	1215.00	266.00
AVERAGE SPILLAGE (M3/SEC)	378.00	180.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>1555.00</b>	<b>1395.00</b>	<b>266.00</b>
COMPUTED INFLOW (M3/SEC)	1555.00	1464.00	113.00
STORAGE DIFFERENTIAL	<b>0.00</b>	<b>69</b>	<b>-153</b>
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 THURSDAY 21/02/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	591.9	22:00	547.5	380.3	05:00
EKO					
IKEJA	588.8	10:00	814.13	409.4	15:00

2.0 GAS POSITION: FRIDAY 22/02/2019

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	501	1100		491	609
DELTA (GAS)	336	915		350	565
OMOTOSHO GAS	133.6	336.8		136.2	200.6
OMOTOSHO NIPP	101	500		120	380
OLORUNSOGO (GAS)	198.4	336		184.5	151.5
OLORUNSOGO NIPP	0	0		0	750
SAPELE NIPP	99.1	500		112.5	387.5
SAPELE STEAM	0	720		60	660
AFAM IV-V	0	300		0	300
AFAM VI	140	650		300	350
GEREGU GAS	273	435		290	145
GEREGU NIPP	422	480		290	145
OKPAI (GAS/STEAM)	50	400		186	284
ALAOJI NIPP	111.7	504		111.7	392.3
IHOVBOR NIPP	100.7	337.5		112.5	225
IBOM	86.9	198		115	83
ODUKPANI NIPP	318.5	625		345	280
<b>TOTAL</b>	<b>2871.9</b>	<b>9122.30</b>		<b>3204.4</b>	<b>5917.9</b>

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : THURSDAY 21/02/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF FRIDAY 22/02/2019 = 0MW. FREQUENCY 50.20Hz.

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	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 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Friday 22/02/2019 as at 0600Hrs was = 1043.6MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO LINE CONSTRAINTS</b>					
1	Ibom GT3	115	91.1	23.9	313.9
2	Geregu GT12	145	0	145	
3	Geregu NIPP GT23	145	0	145	
<b>4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS</b>					
1	Odukoani GT2 & 5	230	0	230	729.7
2	Geregu Gas GT13	145	80	65	
3	Geregu NIPP GT22	145	100	45	
4	Jebba 2G2	90	0	90	
5	Azura-Edo GT12	153	75	78	
6	Alaoji NIPP GT1	112.5	80.8	31.7	
7	Shiroro 411G1 & 4	300	110	190	
<b>4.3 DUE TO WATER MANAGEMENT:</b>					
				0	0
<b>Grand Total</b>					<b>1043.6</b>

**5.0 OUTAGES:**

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

- 13:53 - 14:48Hrs, Kainji 1G5 tripped on transformer differential relay. LHR = 107MW.
- 18:41 - 20:02Hrs, Alaoji NIPP GT2 tripped on high exhaust temperature. LHR = 100MW

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

- 15:32 through 24:00Hrs, Benin/Omotosho 330kV line (cct B5M) tripped at both ends on the following relay indications:  
**At Benin T/S:**  
Trip-trip, trip-TRL3, PHS-STFWL3, ZM1 trip, EFC-CS, AR in progress, DEF-block, ZM 2&3-start ZCIP-CSL3, TOC-STL3, HS-TRL3, fault loop = L3, distance = 82.1km, Auxiliary Relay: 86C  
**At Omotosho T/S:**  
PSL 608: Digital short pilot protection, wire pilot phase C trip  
PSL 601 & 602 Digital line protection: Trip, ABC,  
Auxiliary Relay: Tripping ABC stages 1 & 2. No load loss as ccts B6N & M5W were in service.  
16:18Hrs, Trial restoration at Benin T/S failed on:  
ABB relay: Trip-trip, trip - TRL1, 2 & 3, SOFT, TOC-STL1,2 & 3, VAJ 86ABC  
Ohmega relay: Zone 1, phases ABC, E/F, SOFT.

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

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

- 08:46 - 16:42Hrs, Gombe T/S 150MVA 330/132/33kV transformer T1A was taken out for safe working space to facilitate the installation of 50MX Reactor R1 circuit breaker. Load loss = 44MW
- 10:40 - 12:18Hrs, Mando T/S 150MVA 330/132/33kV transformer T1A was taken out to treat hot spot on the secondary Yellow Phase down dropper conductor clamp. Load loss = 13MW.
- 11:59 - 12:13Hrs, Jebba/Osogbo 330kV line 1 (cct J1H) was taken out of service for maintenance crew to build up low SF6 gas in the CB at Osogbo T/S to normal pressure. No load interrupted as ccts H3G & J3G were in service.
- 11:27 - 17:34Hrs, Delta GT13 was shut down due to turbine vent trouble. Load loss = 16MW.
- 12:16 through 24:00Hrs, Gbarain GT2 was shut down due to low gas pressure. Load loss = 98MW.

**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 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:-**

The under mentioned lines were opened on frequency control.

- 09:09 – 09:14Hrs, Osogbo/Akure/Ado-Ekiti 132kV line. Load loss = 56MW. Frequency was 49.76Hz.
- 13:45 – 13:57Hrs, Ayede/Ibadan-North/Iwo/Iseyin 132kV line. Load loss = 37MW. Frequency was 49.86Hz.
- 14:06 – 14:15Hrs, Ayede/Jericho 132kV line. Load loss = 20MW. Frequency was 49.90Hz.

**5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- Nil.**

**5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts A1S & U1A.**

**5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- cct A1K.**

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

**5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts D3T, J2H, K4U & B5M**

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

- 6 WEATHER REPORT:-** Rainfall reported at Omotosho, Oke-Aro, Ikeja West, Otta, Omotosho, Shagamu,

**7 INTERNATIONAL LINES:-**

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

Maximum load - 259MW at 12:00Hrs.

Minimum load - 221MW at 08:00Hrs.

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

Maximum load - 108.0MW at 15:00Hrs.

Minimum load - 66.0MW at 08:00Hrs.

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

Maximum load - 35.2MW at 21:00Hrs.

Minimum load - 16.2MW at 11:00Hrs.

**8 MISCELLANEOUS:-**

- 01:20Hrs, Odukpani GT4 was tied. The unit was out due to system disturbance of 20/02/2019.
- 01:27 – 05:29Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 82MW.
- 05:14Hrs, Okpai GT12 was tied. The unit was out due to system disturbance of 20/02/2019.
- 07:29 - 14:32Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 73MW.

**10 COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	38	34
OPTIC FIBRE	13	12
PLS	14	4

**11 SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	4	4
330kV	19	6	13
132kV	102	78	24

- 5 09:18Hrs, Odukpani/Ikot-Ekpene 330kV line 1 (cct D1K) was restored.
- 6 09:22Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) was restored.
- 7 09:33Hrs, Sapele ST3 was tied. The unit was out due to system disturbance of 20/02/2019
- 8 09:57Hrs, Okpai ST10 was tied. The unit was out due to system disturbance of 20/02/2019.
- 9 10:56Hrs, Afam VI GT11 was tied to swap with GT13.
- 10 10:58 - 21:06Hrs, Afam VI GT13 was shut down. No load loss as 140MW was transferred to GT11.
- 11 11:23 through 24:00Hrs, Geregu NIPP GT23 was shut down due to low load demand by the Discos. Load loss = 140MW.
- 12 11:41Hrs, Odukpani NIPP GT5 was tied. The unit was out due to system disturbance of 20/02/2019.
- 13 16:29Hrs, Olorunsogo gas GT6 was tied to swap with GT8
- 14 16:38 through 24:00Hrs, Olorunsogo gas GT8 was shut down and 30.5MW was transferred to GT6.
- 15 20:53Hrs, Makurdi T/S 330kV 75MX Shunt Reactor was switched off on voltage control. V/P = 307/319kV
- 16 20:28Hrs, Geregu gas GT13 was tied to swap with GT12.
- 17 20:47 through 24:00Hrs, Geregu gas GT12 was shut down and 135MW was transferred to GT13.

\*\*\*\* 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(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:**

- 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 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
- 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.

**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**

- 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 (F) UNAVAILABLE SYNCHROSCOPES :**

- 1 Ikeja West, Onitsha, Egbin, Ugwuaji, 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

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.





