

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF TUESDAY 26/02/2019
FOR: EVENTS OF MONDAY 25/02/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,960	21:45	25/02/2019
GENERATION CAPABILITY	6047.1	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5366.7	-do-	-do-
PEAK GENERATION	4492.2	-do-	-do-
LOWEST GENERATION	3145.7	04:00	25/02/2019
8-HOURLY DURATION PEAK	3698.1	0100-0800	-do-
	3998.03	0900-1600	-do-
	4492.2	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	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	355	New Haven T/S	03:00
LOWEST VOLTAGE FOR THE DAY	286	Kaduna T/S	20:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.47	04:15
LOWEST FREQUENCY	49.90	20:00

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Feb., 2019		No. of days since last total collapse: 06											
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 318											
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
2011	Total	--	--	--	--	4	3	1	1	--	1	--	13
	Partial	--	1	--	--	--	--	--	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	390	284
2 JEBBA	HYDRO	372	227
3 SHIRORO	HYDRO	428	108
4 EGBIN ST2 - 5	STEAM	474	406
5 SAPELE	STEAM	60	50
6 DELTA	GAS	281	260
7 AFAM IV-V	GAS	50	30
8 GEREGU GAS	GAS	131	145
9 OMOTOSHO GAS	GAS	135.1	121.3
10 OLORUNSOGO GAS	GAS	137.9	145.9
11 GEREGU NIPP	GAS	263	180
12 SAPELE NIPP	GAS	93.7	79.9
13 ALAQJI NIPP	GAS	72.5	73.3
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	104.5	93.2
16 ODUKPANI NIPP	GAS	306.8	85.9
17 IHOVBOR NIPP	GAS	99.3	84.2
18 OKPAI	GAS	193	162
19 AFAM VI	GAS	165	110
20 IBOM POWER	GAS	87.3	82.8
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	55.6	54.1
24 TRANS AMADI	GAS	20.2	19.4
25 RIVERS IPP	(GAS)	136	80
26 AZURA - EDO IPP	(GAS)	274	150
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	64.9	61.4
29 GBARAIN NIPP	GAS	97.4	52.3
TOTAL		4492.2	3145.7

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED	AV. POWER GENERATED	ENERGY SENT OUT	AV. POWER SENT OUT
		MWH	MW/HH	MWH	MW/HH
1 KAINJI	HYDRO	8972.00	373.83	8954.30	373.10
2 JEBBA	HYDRO	7050.00	293.75	7026.28	292.76
3 SHIRORO	HYDRO	4497.00	187.38	4463.36	186.97
4 EGBIN ST2 - 5	STEAM	10145.00	422.71	9525.40	396.89
5 SAPELE	STEAM	1366.90	56.95	1267.80	52.83
6 DELTA	GAS	6813.27	283.89	6717.30	279.89
7 AFAM IV-V	GAS	544.77	22.70	539.48	22.48
8 GEREGU GAS	GAS	4762.30	198.43	4736.32	197.35
9 OMOTOSHO GAS	GAS	2954.00	123.08	2931.80	122.16
10 OLORUNSOGO GAS	GAS	3246.00	135.25	3217.32	134.06
11 GEREGU NIPP	GAS	4615.37	192.31	4596.49	191.52
12 SAPELE NIPP	GAS	2371.45	98.81	2355.01	98.13
13 ALAQJI NIPP	GAS	1720.63	71.69	1712.80	71.37
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2526.60	105.28	2507.40	104.48
16 ODUKPANI NIPP	GAS	4100.51	170.85	4066.21	169.43
17 IHOVBOR NIPP	GAS	2300.00	95.83	2279.70	94.99
18 OKPAI	GAS	4418.00	184.08	4290.30	178.76
19 AFAM VI	GAS	3458.53	144.11	3356.58	139.86
20 IBOM	GAS	2088.84	87.04	2080.00	86.67
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	4522.55	188.44	4495.40	187.31
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1377.60	57.40	1346.66	56.11
25 TRANS AMADI	GAS	397.10	16.55	386.60	16.11
26 RIVERS IPP	GAS	2799.00	116.63	2792.80	116.37
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1574.70	65.61	1567.24	65.30
29 GBARAIN NIPP	GAS	2198.00	91.58	2182.90	90.95
TOTAL		90,820.12	3,784.17	89,395.45	3,724.81

1.7A GENERATION POSITION AT 06:00HRS OF TUESDAY 26/02/2019

	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 50.22Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	398	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.
	JEBBA HYDRO	6	2G1 - 4 4	360	360	2G1, 3 & 4 3	250	250	2G2 - Out due to low load demand by the Discos. 2G5 - Out for annual maintenance. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1 & 2 2	300	103	411G1 & 2 - Generation reduced due to low load demand by the Discos. 411G3 - Out due to radiators oil leakage. 411G4 - Out on water management.
	EGBIN STEAM	6	ST1, 2, 4 & 5 4	880	580	ST1, 2, 4 & 5 4	580	395	ST1, 2, 4 & 5 - Generation reduced due to gas constraints & low load demand by the Discos. GT3 - Out due to technical problems. GT6 - Out on gas constraints.
	SAPELE (STEAM)	6	ST3 1	120	60	ST3 1	60	60	ST1 & 2 - Tripped on high vibration. ST4 - Out on fault. ST5 - Awaiting major overhaul.
	DELTA (GAS)	18	GT6, 7, 10 - 13, 15, 16 & 20 9	475	445	GT6, 7, 10 - 13, 16 & 20 8	281	281	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. GT15 - Out due to low load demand by the Discos. GT19 - Out on gas constraints. Generation reduced due to gas constraints.
	AFAM IV & V (GAS)	8	GT18 1	70	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	134	GT11 - Out due to low load demand by the Discos. GT13 - Tripped on reverse power.
	OMOTOSHO GAS	8	GT2, 4, 7 & 8 4	168	152	GT2, 4, 7 & 8 4	136.8	136.8	GT1, 3, 5 & 6 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1, 2, 4, 5, 6 & 7 6	252	228	GT2, 4, 6 & 7 4	152	112.8	GT1 & 5 - Shut down due to low load demand by the Discos. GT3 & 8 - Out due to gas constraint. Generation reduced due to low load demand by the Discos.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT21 & 22 2	290	222	GT22 - Generation reduced due to low load demand by the Discos. GT23 - Out due to line constraints.
	SAPELE NIPP	4	GT1 1	112.5	112.5	GT1 1	112.5	95.8	GT2 - Out due to leakage on the vent line. GT3 - Out due to gas constraint. GT4 - Out due to high air inlet differential pressure.
	ALAOJI NIPP GAS	4	GT2 1	120	120	0 0	0	0	GT2 - Shut down due to low load demand by the Discos. GT3 - Shut down 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, 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.
	OMOTOSHO NIPP GAS	4	GT2 1	125	120	GT2 1	120	108.9	GT1 - Out on maintenance. GT3 & 4 - Out due to gas constraint.
	ODUKPANI NIPP	5	GT1 - 5 5	575	575	GT1 & 4 2	230	170.5	GT2, 3 & 5 - Out due to low load demand by the Discos. GT1 & 4 - Generation reduced due to low load demand by the Discos.
	IHOVBOR NIPP	4	GT1 1	112.5	112.5	GT1 1	112.5	99.3	GT1 - On manual adjustment to frequency. GT2 - Out due to gas constraints. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	94.6	Available unit on bar.
IPP	OKPAI GAS/STEAM	3	GT12 & ST18 2	220	220	GT12 & ST18 2	220	186	GT11 - Out on maintenance. ST18 - Generation reduced due to boiler problem
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 & 13 2	306	150	GT11 & 13 - Generation reduced due to low load demand by the Discos. GT12 - Out due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT11 & 13 2	300	300	GT13 1	150	110	GT11 - Generation reduced due to low load demand by the Discos. GT12 & ST10 - Out due to gas constraint. GT13 - Out due to low load demand by the Discos.
	IBOM POWER GAS	3	GT3 1	120	115	GT3 1	115	82.7	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Generation reduced due to line constraint
	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 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 3 & 5 3	75	60	GT1, 3 & 5 3	56.6	56.6	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1 1	25	20.6	GT1 1	20.6	20.6	GT2 & 4 - Out due to gas constraint. GT3 - Out on fault.
	RIVERS	1	GT1 1	160	160	GT1 1	160	90	GT1 - Generation reduced due to low demand by the Discos.
	SUB TOTAL	141	65	6603.5	6124.1	51	4400.5	3387.6	Frequency = 50.22Hz.

1.7B GENERATION POSITION AT 06:00HRS OF TUESDAY 26/02/2019 FOR UNITS ON BILATERAL AGREEMENT									
	PARAS ENERGY	8	GT3 - 10	70	68.6	GT3 - 10	68.6	68.6	Available units on bar.
			8			8			
	SUB TOTAL	8	8	70	68.6	8	68.6	68.6	
	GRAND TOTAL	149	73	6673.5	6192.7	59	4,469.10	3,456.20	Frequency = 50.22Hz

1.7C BILATERAL AGREEMENT UNITS DISPATCH - MONDAY 25/02/2019								
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	2	2200HRS			24		NIL
	FEEDER 8	17	0800HRS			24		NIL
IKORODU	PULK IT	1	0900HRS			24		NIL
	INDUSTRIAL	8	2000HRS			24		NIL
	SPINTEX	7	2100HRS			24		NIL
	DANGOTE	2	1400HRS			24		NIL
	LAND CRAFT	18	1900HRS			24		TRIPPED ON O/C
ALAUSA	TR4 15MVA	7.5	1300HRS			23		OTA/OGBA 132KV LINE TRIPPED AT OTA END
	TR5 -15MVA	3.9	1200HRS			23		TRIPPING ON 132KV LINE
	ALAUSA	11.7	1700HRS			17		DUE TO TRIPPING ON 33KV
MLAND	PTC (MARYLAND)	20	1500HRS			24		NIL
	TOTAL LOAD							

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF MONDAY 25/02/2019							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	68.6	15:00	61.4	03:00	24	1574.7	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI MONDAY 25/02/2019										
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		ON	ON	ON	ON	ON	ON	ON	ON	
KAM STEEL	132kV line 2	25.0	21.6	11:00	0.2	01:00	24	141	SUPPLY NOT INTERRUPTED	
ASHAKA CEMENT		0	12.8	04:00	4.7	22:00	24	217	SUPPLY NOT INTERRUPTED	
XING 1	33kV feeder	0	20.6	02:00	1.4	19:00	24	161.2	SUPPLY NOT INTERRUPTED	
XING 2		0	21:36	01:00	0.15	19:00	24	156.75	SUPPLY NOT INTERRUPTED	
KAM INTEGRATED		15	4.4	18:00	1.8	01:00	24	68.9	SUPPLY NOT INTERRUPTED	
OLAM FLOUR MILLS		3	2.3	08:00	2.24	15:00	24	40.3	SUPPLY NOT INTERRUPTED	
LORDSMITH		3	0.5	13:00	0.3	01:00	24	9.1	SUPPLY NOT INTERRUPTED	

1.8 HYDROLOGICAL DATA: TUESDAY 26/02/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.72	103.38	372.25
TAIL WATER ELEVATION (METERS)	105.4	74.6	270.4
GROSS OPERATING HEAD (METERS)	36.32	28.78	101.85
AVERAGE TURBINE DISCHARGE (M3/SEC)	1133.00	1098.00	220.00
AVERAGE SPILLAGE (M3/SEC)	778.00	683.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1911.00	1781.00	220.00
COMPUTED INFLOW (M3/SEC)	1911.00	1850.00	96.00
STORAGE DIFFERENTIAL	0.00	69	-124
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 MONDAY 25/02/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	572.1	10:00	551.8	368.5	18:00
EKO					
IKEJA	599.1	21:00	719.75	284.7	03:00

2.0 GAS POSITION: TUESDAY 26/02/2019

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		580	520
DELTA (GAS)	336	915		281	634
OMOTOSHO GAS	133.6	336.8		136.8	200
OMOTOSHO NIPP	101	500		120	380
OLORUNSOGO (GAS)	198.4	336		144.9	191.1
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	99.1	500		112.5	387.5
SAPELE STEAM	0	720		60	660
AFAM IV-V	0	300		50	250
AFAM VI	140	650		150	500
GEREGU GAS	273	435		145	290
GEREGU NIPP	422	435		290	145
OKPAI (GAS/STEAM)	50	480		220	260
ALAOJI NIPP	111.7	504		0	504
IHOVBOR NIPP	100.7	337.5		112.5	225
IBOM	86.9	198		115	83
ODUKPANI NIPP	318.5	625		230	395
TOTAL	2871.9	9122.30		2747.7	6374.6

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : MONDAY 25/02/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF TUESDAY 26/02/2019 = 0MW, FREQUENCY 50.22Hz.

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	Gregu NIPP	GT22	35	0	0
5	Omotosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Tuesday 26/02/2019 as at 0600Hrs was = 2473MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO LINE CONSTRAINTS					
1	Gregu NIPP GT23	145	0	145	177.3
2	Ibom GT3	115	82.7	32.3	
			0	0	
4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Egbin ST1, 2, 4 & 5	580	395	185	2295.7
2	Gregu Gas GT11	145	0	145	
3	Gregu NIPP GT22	145	0	145	
4	Delta GT15	115	0	115	
5	Azura-Edo GT11 - 13	461	150	311	
6	Shiroro 411G1 & 2	300	103	197	
7	Olorunsogo Gas GT1 - 7	266	112.8	153.2	
8	Rivers GT1	160	90	70	
9	Afam GT18	50	30	20	
10	Odukpani GT1 - 5	575	170.5	404.5	
11	Afam GT11 & 13	300	110	190	
12	Alaoji NIPP GT2	120	0	120	
13	Jebba 2G2	90	0	90	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G4	150	0	150	150
Grand Total					2473

5.0 OUTAGES:-

5 (A) FORCED OUTAGES (GENERATION):-

- 1 19:59 through 24:00Hrs, Geregu GT11 tripped on dead bus and excitation relay. LHR = 140MW
- 2 20:01 through 24:00Hrs, Geregu G/S GT13 tripped on reverse power due to neutral gas premix valve trouble. LHR = 144MW
- 3 19:59 - 21:13Hrs, Geregu NIPP GT22 went on house load due to the tripping of ccts B12J, J1L & J2L. LHR = 133MW

5 (B) FORCED OUTAGES (TRANSMISSION):-

- 1 00:47 - 07:14Hrs, Oji River/Nsukka 66kV line CB tripped at Oji River T/S on distance protection, O/C Red & Blue phases, O/C start JR and JT, E/F start JM, auxiliary start R & T zone 5, FCT = 0.1sec. LHR = 3MW. Weather – Rainfall.
- 2 14:04Hrs, Otta/Ogba 132kV line CB tripped at Ogba T/S on Siemens back up relay - O/C 3 phases, Instantaneous O/C and instantaneous E/F. LHR = 42MW
- 3 20:00 - 22:29Hrs, Makurdi T/S 150MVA 330/132/33kV transformer T2 primary and secondary CBs tripped on O/C phase II. LHR = 52.8MW
- 4 13:53 -14:28Hrs, Nsukka T/S 30MVA 132/33kV transformer T1 primary CB tripped on E/F and lockout. LHR = 6.8MW
- 5 19:59 through 24:00Hrs, Ajaokuta T/S 162MVA 330/132/33kV transformer T2 primary CB tripped on REF. LHR = 18MW. The transformer was isolated.
- 6 19:59Hrs, Benin/Ajaokuta 330kV line 2 (ccts B12J) & Ajaokuta/Lokoja 330kV lines 1 & 2 (ccts J1L & J2L) tripped at Ajaokuta T/S without relay indications. Total LHR = 521MW
20:48Hrs, ccts J1L & J2L CB were closed.
20:54Hrs, cct B12J CB was closed

5 (C) PLANNED OUTAGES:- NIL

5 (D) URGENT OUTAGES:-

- 1 14:50 - 19:33Hrs, Trans-Amadi GT1 was shut down due to low gas pressure. Load loss = 20MW.
- 2 17:35 - 19:39Hrs, Odukan GT3 was shut down to reduce high load flow (405MW) on cct. T4A. Load loss = 94.3MW
- 3 18:34 through 24:00Hrs, Afam VI GT13 was shut down to reduce load flow on cct T4A. Load loss = 110MW

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 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).

10 COMMUNICATION MEDIA

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

5 (E) EMERGENCY OUTAGES:- The under mentioned lines were opened on frequency control.

- 1 20:00 - 21:27Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. Load loss = 50MW. Frequency was 49.64Hz
- 2 20:00 - 20:24Hrs, Ayede/Jericho 132kV line. Loas loss = 40MW. Frequency was 49.64Hz

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:-

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

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

6 WEATHER REPORT:- Heavy rainfall reported at Yola, Oji, Alaoji, Ajaokuta

7 INTERNATIONAL LINES:-

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

Maximum load - 255MW at 20:00Hrs.

Minimum load - 207MW at 08:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 99.0MW at 22:00Hrs.

Minimum load - 48.0MW at 08:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 33.3MW at 21:00Hrs.

Minimum load - 16.0MW at 11:00Hrs.

8 MISCELLANEOUS:-

- 1 00:25 - 09:53Hrs, Delta GT15 was shut down due to low load demand by the Discos. Load loss = 75MW
- 2 01:06 - 12:20Hrs, Odukan NIPP GT3 was shut down due to low load demand by the Discos. Load loss = 98.7MW
- 3 05:49 - 07:03Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 76MW
- 4 08:05 - 20:24Hrs, Afam IV GT18 was shut down due to low load demand by the Discos. Load loss = 30MW
- 5 09:36Hrs, Jebba 2G2 was tied to swap with 2G4.
- 6 09:37Hrs, Jebba 2G4 was shut down load was transferred to 2G2.
- 7 10:21Hrs, Omoku GT1 was tied.
- 8 12:57Hrs, Afam VI GT11 was tied. The unit was out due to low load demand by the Discos.
- 9 15:40Hrs, Jebba P/S 2G4 was tied. The unit was out due to low load demand by the Discos.

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	4	4
330kV	19	8	11
132kV	102	80	22

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.
- Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.
- 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:

cct A1K CB

ENUGU REGION:

- New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the
- 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.

- 15:59Hrs, Alaoji/Aba 132kV line 1 was restored after maintenance crew rectified the open circuits in the protection panel wiring. Note: the line was opened due to hissing sound observed on the protection panel at 20:04Hrs of 22/02/2019.
 - 16:05 - 18:22Hrs, Jebba P/S 2G2 was shut down due to low load demand by the Discos. Load loss = 75MW
 - 16:05Hrs, Odukipani P/S GT1 was tied. The unit was out due to low load demand by the Discos.
 - 18:53Hrs, Ijora T/S 30MVA 132/33kV transformer T1 was restored after maintenance crew replaced the shattered C.T at the secondary side of the transformer. Note: The transformer tripped on bias differential protection of 10:43Hrs at 24/02/2019.
 - 19:47Hrs, Shiroro P/S 411G4 was tied. The unit was out due to low load demand by the Discos.
 - 21:17Hrs, Geregu Gas GT12 was tied. The unit was out due to low load demand by the Discos.
 - 20:05Hrs, Osogbo T/S 330kV 75MX Shunt Reactor 4R1 was taken out of service for voltage control. V/P = 307/310kV
 - 23:35 through 24:00Hrs, Shiroro P/S 411G4 was shut down due to low load demand by the Discos. Load loss = 50MW
- **** **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/Itire 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 :**

- Ikeja West, Onitsha, Egbin, Uguwaji, 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) - 08105894708, CUG: 07016228668

- 4 O Turkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.
 - 5 New Haven/Nkalaqu 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.

