

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF MONDAY 25/02/2019

FOR: EVENTS OF SUNDAY 24/02/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,960	21:30	24/02/2019
GENERATION CAPABILITY	6081.4	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5458.1	-do-	-do-
PEAK GENERATION	4421.6	-do-	-do-
LOWEST GENERATION	2945.4	13:00	24/02/2019
8-HOURLY DURATION PEAK	3940.2	0100-0800	-do-
	3376.5	0900-1600	-do-
	4421.6	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	359	Omotosho T/S	10:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso, Gombe & Yola T/S	18:00, 09:00 & 19:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.42	13:14
LOWEST FREQUENCY	50.07	17:30

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Feb., 2019		No. of days since last total collapse: 05												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 317												
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	20
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	390	153
2 JEBBA	HYDRO	379	175
3 SHIRORO	HYDRO	275	111
4 EGBIN ST2 - 5	STEAM	503	442
5 SAPELE	STEAM	60	40
6 DELTA	GAS	312	274
7 AFAM IV-V	GAS	48	48
8 GEREGU GAS	GAS	270	160
9 OMOTOSHO GAS	GAS	120.9	121
10 OLORUNSOGO GAS	GAS	144.3	124
11 GEREGU NIPP	GAS	280	162
12 SAPELE NIPP	GAS	96.7	90.4
13 ALAQJI NIPP	GAS	71.4	72
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	109.9	82.9
16 ODUKPANI NIPP	GAS	206.5	148.9
17 IHOVBOR NIPP	GAS	101.6	68.4
18 OKPAI	GAS	188	170
19 AFAM VI	GAS	110	0
20 IBOM POWER	GAS	88	83.9
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	56.5	52.3
24 TRANS AMADI	GAS	19.9	19.6
25 RIVERS IPP	(GAS)	143	134
26 AZURA - EDO IPP	(GAS)	286	150
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	66.6	63
29 GBARAIN NIPP	GAS	95.3	0
TOTAL		4421.6	2945.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED	AV. POWER GENERATED	ENERGY SENT OUT	AV. POWER SENT OUT
		MWH	MWHH	MWH	MWHH
1 KAINJI	HYDRO	8936.00	372.33	8919.60	371.65
2 JEBBA	HYDRO	6979.00	290.79	6956.20	289.84
3 SHIRORO	HYDRO	3902.00	162.58	3868.61	161.19
4 EGBIN ST2 - 5	STEAM	11361.00	473.38	10711.60	446.32
5 SAPELE	STEAM	1232.20	51.34	1132.10	47.17
6 DELTA	GAS	7334.11	305.59	7160.00	298.33
7 AFAM IV-V	GAS	1137.28	47.39	1132.03	47.17
8 GEREGU GAS	GAS	5086.90	211.95	5061.52	210.90
9 OMOTOSHO GAS	GAS	2894.00	120.58	2870.70	119.61
10 OLORUNSOGO GAS	GAS	3650.76	152.12	3621.75	150.91
11 GEREGU NIPP	GAS	5095.51	212.31	5076.76	211.53
12 SAPELE NIPP	GAS	2400.16	100.01	2383.86	99.33
13 ALAQJI NIPP	GAS	1384.56	57.69	1383.41	57.64
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2410.20	100.43	2390.80	99.62
16 ODUKPANI NIPP	GAS	4587.87	191.16	4551.67	189.65
17 IHOVBOR NIPP	GAS	2150.00	89.58	2130.95	88.79
18 OKPAI	GAS	4398.00	183.25	4272.20	178.01
19 AFAM VI	GAS	460.51	19.19	361.11	15.05
20 IBOM	GAS	1986.42	82.77	1978.00	82.42
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	5055.25	210.64	5030.30	209.60
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1384.90	57.70	1352.76	56.37
25 TRANS AMADI	GAS	234.90	9.79	220.90	9.20
26 RIVERS IPP	GAS	1835.70	76.49	1827.80	76.16
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1568.40	65.35	1561.70	65.07
29 GBARAIN NIPP	GAS	762.00	31.75	752.10	31.34
TOTAL		88,227.63	3,676.15	86,708.43	3,612.85

1.7A GENERATION POSITION AT 06:00HRS OF MONDAY 25/02/2019

	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	396	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 - 4 4	360	322	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	107	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	407	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	50	ST3 1	50	50	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	275	275	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	GT11 & 13 2	290	182	GT11 & 13 - Generation reduced due to low load demand by the Discos. GT12 - Out due to line constraints.
	OMOTOSHO GAS	8	GT2, 4, 7 & 8 4	168	152	GT2, 4, 7 & 8 4	121.6	121.6	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	144.9	144.9	GT1 & 5 - Shut down due to low load demand by the Discos. GT3 & 8 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT21 - 23 3	435	435	GT21 & 22 2	290	180	GT21 & 22 - 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	94.2	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	GT2 1	71	71	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	106.3	GT1 - Out on maintenance. GT3 & 4 - Out due to gas constraint.
	ODUKPANI NIPP	5	GT1 - 5 5	575	575	GT4 1	115	96.3	GT1 - 3 & 5 - Out due to low load demand by the Discos. GT4 - Generation reduced due to low load demand by the Discos
	IHOVBOR NIPP	4	GT1 1	112.5	112.5	GT1 1	112.5	98.4	GT1 - On manual adjustment to frequency. GT2 & 4 - Out due to gas constraints. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	GT2 1	112.5	96	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	GT13 1	150	150	GT13 1	150	110	GT11 - Tripped on flame monitor. GT12 & ST10 - Out due to gas constraint. GT13 - Generation reduced due to low load demand by the Discos.
	IBOM POWER GAS	3	GT3 1	120	115	GT3 1	115	88.1	GT1 & 2 - Out due to fire outbreak on the control panel.
	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	55.5	55.5	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1 1	25	20.5	GT1 1	20.2	20.2	GT2 & 4 - Out due to gas constraint. GT3 - Out on fault.
	RIVERS	1	GT1 1	160	160	GT1 1	160	80	GT1 - Generation reduced due to low demand by the Discos.
	SUB TOTAL	141	64	6453.5	5964	53	4571.7	3467.5	Frequency = 50.22Hz.

1.7B GENERATION POSITION AT 06:00HRS OF MONDAY 25/02/2019 FOR UNITS ON BILATERAL AGREEMENT									
	PARAS ENERGY	8	GT3 -10	70	67	GT3 -10	67	67	Available units on bar.
			8			8			
	SUB TOTAL	8	8	70	67	8	67	67	
	GRAND TOTAL	149	72	6523.5	6031	61	4,638.70	3,534.50	Frequency = 50.22Hz

1.7C BILATERAL AGREEMENT UNITS DISPATCH - SUNDAY 24/02/2019							
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	1900HRS		6		TRIPPING ON FEEDER 33KV
	PTC EXPRESS	ON	1900HRS		6		TRIPPING ON FEEDER 33KV
	SANKYO	1	0100HRS		17		TRIPPED ON INST. OC AND INST. EF
	FEEDER 8	11	1700HRS		24		NIL
IKORODU	PULK IT	5	1100HRS		24		NIL
	INDUSTRIAL	ON	0100HRS		24		NIL
	SPINTEX	2	0700HRS		24		NIL
	DANGOTE	1	1400HRS		24		NIL
	LAND CRAFT	13	2300HRS		17		TRIPPED ON O/C
ALAUUSA	TR4 15MVA	5.2	0100HRS		23		OTA/OGBA 132KV LINE TRIPPED AT OTA END
	TR5 -15MVA	3	2000HRS		23		OTA/OGBA 132KV LINE TRIPPED AT OTA END
	ALAUUSA	7.1	1800HRS		23		OTA/OGBA 132KV LINE TRIPPED AT OTA END
M/LAND	PTC (MARYLAND)	15	2200HRS		10		OUT ON E/F, BRANCH OF TREE FOULING LINE@ SPO QUARTERS GRA WAS CUT OFF
	TOTAL LOAD						

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF SUNDAY 24/02/2019							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	67.8	02:00	63	01:00	24	1568.4	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI SUNDAY 24/02/2019									
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	0.6	02:00	0.2	10:00	24	76	SUPPLY NOT INTERRUPTED
ASHAKA CEMENT		0	10.8	15:00	8	21:00	24	229.8	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	22.35	17:00	13.8	11:00	24	454.45	SUPPLY NOT INTERRUPTED
XING 2		0	6:00	20:00	6.5	08:00	24	354.9	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	3.9	15:00	1.6	12:00	24	56	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	1.5	14:00	0.1	01:00	24	18.3	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.5	01:00	0.3	12:00	24	9.4	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: MONDAY 25/02/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.72	103.36	372.31
TAIL WATER ELEVATION (METERS)	105.4	74.0	270.0
GROSS OPERATING HEAD (METERS)	36.32	29.36	102.31
AVERAGE TURBINE DISCHARGE (M3/SEC)	1129.00	1052.00	194.00
AVERAGE SPILLAGE (M3/SEC)	683.00	478.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1812.00	1530.00	194.00
COMPUTED INFLOW (M3/SEC)	1680.00	1738.00	9.00
STORAGE DIFFERENTIAL	-132.00	208	-185
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 SUNDAY 24/02/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	369.7	01:00	551.8	160.2	13:00
EKO	444.3	03:00	627.81	66.7	12:00
IKEJA	442.2	03:00	719.75	160	14:00

2.0 GAS POSITION: MONDAY 25/02/2019

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		275	640
OMOTOSHO GAS	133.6	336.8		121.6	215.2
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		50	670
AFAM IV-V	0	300		50	250
AFAM VI	140	650		150	500
GEREGU GAS	273	435		290	145
GEREGU NIPP	422	435		290	145
OKPAI (GAS/STEAM)	50	480		220	260
ALAOJI NIPP	111.7	504		71	433
IHOVBOR NIPP	100.7	337.5		112.5	225
IBOM	86.9	198		115	83
ODUKPANI NIPP	318.5	625		115	510
TOTAL	2871.9	9122.30		2817.5	6304.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 23/02/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF MONDAY 25/02/2019 = 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 Monday 25/02/2019 as at 0600Hrs was = 2100.7MW.

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	290
2	Gregu GT12	145	0	145	
			0	0	
4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Egbin ST1, 2, 4 & 5	580	407	173	1810.7
2	Gregu Gas GT11 & 13	290	182	108	
3	Gregu NIPP GT21 & 22	290	180	110	
4	Delta GT15	115	0	115	
5	Azura-Edo GT11 - 13	461	150	311	
6	Shiroro 411G1 & 2	300	107	193	
7	Olorunsogo Gas GT1 & 5	72	0	72	
8	Rivers GT1	160	80	80	
9	Afam GT18	50	30	20	
10	Odukpani GT1 - 5	575	96.3	478.7	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G4	150	0	150	150
Grand Total					2100.7

5.0 **OUTAGES:**

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

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

- 1 06:35 - 06:57Hrs, Osogbo/Ikeja-West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:
At Osogbo T/S:
Siprotec relay – Relay trip, Red phase, distance pick up LIE, PU time = 104ms, trip time = 33ms, distance = 191.6km
Ohmega relay: Phase A, E, carrier receive 1, carrier receive 2, distance = No location, 86A/2.
Auxiliary relay: 85 X 2 and 86T
Ikeja-West T/S:
General trip – Red phase fault, zone 1 trip, 5 X-B, pick up data AZ, pick up AG, trip time 5ms, pickup time = 50ms, distance = 43km
Microm relay: Red phase fault, distance zone 1 trip. No load loss as ccts H2A, R2A and R1W were in service.
- 2 09:34 - 16:34Hrs, Ikorodu/Maryland 132kV line CB tripped at Ikorodu T/S on O/C A and C phases, distance = 117.5km. LHR = 0.1MW
- 3 09:45 - 10:38Hrs, Otta/Ogba 132kV line CB tripped at Otta T/S on back up relay – O/C, instantaneous O/C, Instantaneous E/F, O/C trip phase 1, L1, O/C trip phases 2 L2, and O/C trip phase 3, L3. LHR = 35MW
- 4 10:43 - 20:05Hrs, Ijora T/S 30MVA 132/33kV transformer T1A primary CB tripped on O/C Red & Blue phases and bias differential. LHR = 8MW
- 5 10:43 - 13:05Hrs, Ijora T/S 45MVA 132/33kV transformer T2A primary CB tripped on O/C 3 phases. LHR = 7MW
- 6 10:43 through 24:00Hrs, Ijora T/S 30MVA 132/33kV transformer T2B primary CB tripped on O/C Yellow phase & bias differential protection. LHR = 8MW
- 7 12:51 - 14:10Hrs, Ikot-Ekpene/Ugwuaji 330kV line 2 (cct K2U) CB tripped at Ikot-Ekpene T/S on main distance protection, zone 1 trip phases B-G, location = 113.22km. No load loss as cct K3U was in service.
- 8 12:53 - 14:05Hrs, Odukpani/Ikot-Ekpene 330kV line 1 (cct D1K) CB tripped at Ikot-Ekpene T/S on main distance protection, zone 2 trip phases B-G, location = 68.24km. No load loss as cct D2K was in service.
- 9 21:13 - 21:21Hrs, Kumbotso T/S 150MVA 330/132/33kV transformer T2A secondary CB tripped on O/C Blue phase. LHR = 106MW

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

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

- 1 09:43 - 10:43Hrs, Egbin/Ikeja-West & Omotosho/Ikeja-West 330kV lines (cct N6W & M5W) CBs were taken out to build up low SF6 gas pressure to normal level at Ikeja-West T/S. Load loss = 120MW & 221MW respectively.
- 2 14:56 - 16:44Hrs, Kubwa T/S 60MVA 132/33kV transformer TR1 was taken out of service to treat hot spot on the Blue phase primary isolator. Load loss = 30.5MW

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:-** NIL

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 Akangba, Ikeja-West, Egbin, Ajah, Shiroro

7 **INTERNATIONAL LINES:-**

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

Maximum load - 258MW at 01:00Hrs.
Minimum load - 172MW at 16:00Hrs.

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

Maximum load - 98.0MW at 22:00Hrs.
Minimum load - 59.0MW at 08:00Hrs.

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

Maximum load - 32.5MW at 21:00Hrs.
Minimum load - 16.6MW at 14:00Hrs.

8 **MISCELLANEOUS:-**

- 1 00:51 - 13:28Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 80MW
- 2 07:16 through 24:00Hrs, Odukpani NIPP GT1 was shut down due to low load demand by the Discos. Load loss = 91MW
- 3 07:52 through 24:00Hrs, Azura-Edo GT12 was shut down due to low load demand by the Discos. Load loss = 75MW
- 4 08:08 through 24:00Hrs, Ikot-Ekpene 330kV line 3 (cct K3U) was taken out on voltage control. V/P = 354/346kV

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	38	31
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	10	9
132kV	102	79	23

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 Omatosho/Ikeja West 330kV line CB at Ikeja West T/S.
- 7 Egbin/Oke-Aro 330kV line 2 (N8K) Defective. Needs replacement.
- 8 Egbin/Ikeja-West Tie CB Defective. Needs replacement.
- 9 Egbin/Aja 330kV line 3 (cct N3J) - Tie CB defective.Needs replacement.

BENIN REGION:

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

PORT HARCOURT REGION:

cct A1K CB

ENUGU REGION:

- 5 08:42 through 24:00Hrs, Olorunsogo gas GT1 was shut down due to low load demand by the Discos. Load loss = 28MW
- 6 08:51 through 24:00Hrs, Olorunsogo gas GT5 was shut down due to low load demand by the Discos. Load loss = 28.8MW
- 7 09:11Hrs, Rivers GT1 was tied. The unit was out due to gas constraints.
- 8 11:55Hrs, Umuaha T/S 40MVA 132/33kV transformer T1 was restored after the transformer was tested okay. Note: The transformer tripped at 02:47Hrs, of 23/02/2019.
- 9 12:25Hrs, Trans-Amadi GT1 was tied. The unit was out due to gas constraints.
- 10 12:47 - 18:49Hrs, Jebba 2G4 was shut down due to low load demand by the Discos. Load loss = 80MW
- 11 13:22 - 18:12Hrs, Alaoji NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 72MW
- 12 13:26 - 19:34Hrs, Odukpiani NIPP GT3 was shut down due to low load demand by the Discos. Load loss = 89MW
- 13 14:28Hrs, Umuaha T/S 40MVA 132/33kV transformer T2 was restored after the transformer was tested okay. Note: The transformer tripped at 02:47Hrs, of 22/02/2019.
- 14 15:50Hrs, Gbarain GT2 was tied.
- 15 20:34Hrs, Afam VI GT13 was tied.
- 16 23:23 through 24:00Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 80MW

**** 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

- 1 Omatosho/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, 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

- 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.
- 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.

