

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SATURDAY 05/01/2019

FOR: EVENTS OF FRIDAY 04/01/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	23,020	20:45	04/01/2019
GENERATION CAPABILITY	5532.6	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4582.5	-do-	-do-
PEAK GENERATION	4582.5	-do-	-do-
LOWEST GENERATION	3677.4	04:00	04/01/2019
8-HOURLY DURATION PEAK	3923.5	0100-0800	-do-
	4147.9	0900-1600	-do-
	4582.5	1700-2400	-do-
PEAK GENERATION TO DATE	5222.3	21:00	18/12/2017
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	06:00	14/04/2014
MAXIMUM ENERGY GENERATED (MWH) TO DATE	109,372.01	0000-2400	02/02/2016

1.2 CRITICAL VOLTAGE

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	330		
STATUTORY LIMITS	280.5 - 346.6		
HIGHEST VOLTAGE FOR THE DAY	344	Birin-Kebbi T/S	04:00
LOWEST VOLTAGE FOR THE DAY	285	Gombe T/S	20:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.62	09:30
LOWEST FREQUENCY	49.70	15:20

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 3rd Jan., 2019		No. of days since last total collapse: 02												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 268												
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 240												
		Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total
2010	Total	---	3	1	--	3	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	2	--	6
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16
	Partial	--	--	2	3	--	--	--	1	--	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	22
	Partial	--	--	--	--	--	--	--	--	2	--	--	--	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	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	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	--	1	--	11
	Partial	0	0	0	1	0	--	--	0	--	--	--	--	1
2019	Total	1	--	--	--	--	--	--	--	--	--	--	--	1
	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	405	382
2 JEBBA	HYDRO	453	274
3 SHIRORO	HYDRO	283	105
4 EGBIN ST2 - 5	STEAM	115	116
5 SAPELE	STEAM	0	0
6 DELTA	GAS	383	365
7 AFAM IV-V	GAS	44	48
8 GEREGU GAS	GAS	408	308
9 OMOTOSHO GAS	GAS	133.7	135.8
10 OLORUNSOGO GAS	GAS	159	165.7
11 GEREGU NIPP	GAS	138	83
12 SAPELE NIPP	GAS	92.6	89.6
13 ALAOJI NIPP	GAS	80.1	59.3
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	109.9	108.7
16 ODUKPANI NIPP	GAS	214.2	194.9
17 IHOVBOR NIPP	GAS	103.2	81.3
18 OKPAI	GAS	305	252
19 AFAM VI	GAS	252	136
20 IBOM POWER	GAS	101.7	104.6
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	59.4	58.7
24 TRANS AMADI	GAS	63.3	40.4
25 RIVERS IPP	(GAS)	20	110
26 AZURA - EDO IPP	(GAS)	426	290
27 EGBIN ST6	(GAS)	164	100
28 PARAS ENERGY	(GAS)	69.4	69.4
29 GBARAIN NIPP	GAS	0	0
TOTAL		4582.5	3677.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	8523.00	355.13	8508.30	354.51
2 JEBBA	HYDRO	8563.00	356.79	8345.04	347.71
3 SHIRORO	HYDRO	3420.00	142.50	3392.14	141.34
4 EGBIN ST2 - 5	STEAM	2790.00	116.25	2645.00	110.21
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	8512.14	354.67	8431.00	351.29
7 AFAM IV-V	GAS	1119.86	46.66	1115.63	46.48
8 GEREGU GAS	GAS	8803.90	366.83	8772.61	365.53
9 OMOTOSHO GAS	GAS	3174.00	132.25	3151.30	131.30
10 OLORUNSOGO GAS	GAS	3902.37	162.60	3873.43	161.39
11 GEREGU NIPP	GAS	2865.00	119.38	2848.45	118.69
12 SAPELE NIPP	GAS	2172.40	90.52	2155.30	89.80
13 ALAOJI NIPP	GAS	1509.82	62.91	1496.92	62.37
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2565.50	106.90	2547.00	106.13
16 ODUKPANI NIPP	GAS	4766.63	198.61	4741.33	197.56
17 IHOVBOR NIPP	GAS	2280.00	95.00	2256.09	94.00
18 OKPAI	GAS	6687.00	278.63	6559.60	273.32
19 AFAM VI	GAS	4534.06	188.92	4443.00	185.13
20 IBOM	GAS	2354.23	98.09	2345.00	97.71
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	8145.20	339.38	8120.35	338.35
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1460.20	60.84	1426.75	59.45
25 TRANS AMADI	GAS	1277.90	53.25	1245.80	51.91
26 RIVERS IPP	GAS	2240.80	93.37	2236.10	93.17
27 EGBIN ST6	STEAM	3572.00	148.83	3387.00	141.13
28 PARAS ENERGY	GAS	1606.30	66.93	1598.50	66.60
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
TOTAL		96,845.31	4,035.22	95,641.64	3,985.07

1.7A GENERATION POSITION AT 06:00HRS OF SATURDAY 05/01/2019

	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 50.26Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	382	1G5, 6, 11 & 12 - On frequency response. 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 - 5 5	475	461	2G1, 4 & 5 3	283	283	2G2 & 3 - Out due to low load demand by the Discos. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1 & 4 2	300	120	411G1 & 4 - Generation reduced due to low load demand by the Discos. 411G2 - Shut down on water management. 411G3 - Out on annual maintenance.
	EGBIN STEAM	6	ST4 & 6 2	440	440	ST4 & 6 2	278	278	ST1 - Out due to the unit transformer problem. ST2 - Out due to middle burner level problem. ST3 - Out on high vibration since 19th June 2017. ST5 - Tripped due to loss of lower burner and tube leakage. ST6 - Generation reduced due to a burner problem.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 & 3 - Tripped on low water drum level. ST2 - Tripped on high vibration. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT6, 7, 9 - 13, 15, 16, 19 & 20 11	565	560	GT6, 7, 9 - 13, 15, 16 & 19 10	425	402	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. GT13 & 20 - Out due to low load demand by the Discos. GT15, 16 & 19 - On frequency response. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 - Out due to oil leakage on the bearing compartment. GT18 - Tripped on preserve air intake less than minimum. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	358	GT11 - 13 - Generation reduced due to low load demand by the Discos.
	OMOTOSHO GAS	8	GT1, 4, 6, 7 & 8 5	210	190	GT1, 6, 7 & 8 4	102.1	102.1	GT2, 3 & 5 - Out due to gas constraint. GT4 - Out due to low load demand by the Discos.
	OLORUNSOGO GAS	8	GT1, 3, 4, 7 & 8 5	210	190	GT1, 3, 4, 5 & 7 5	166.2	166.2	GT2 & 6 - Out due to gas constraint. GT8 - Out due to low load demand by the Discos.
NIPP	GEREGU NIPP	3	GT23 1	145	145	GT23 1	145	131	GT21 & 22 - Out on maintenance. GT23 - Generation reduced due to low load demand by the Discos.
	SAPELE NIPP	4	GT2 1	112.5	112.5	GT2 1	112.5	87.9	GT1 & 3 - Out due to low gas pressure. GT2 - On frequency response. GT4 - Out due to high air filter differential pressure.
	ALAOJI NIPP GAS	4	0 0	0	0	0 0	0	0	GT1 - Out due to high air inlet differential pressure. GT2 - Out due to low gas pressure. 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 - 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	104.5	GT1, 3 & 4 - Out due to gas constraint. GT2 - On frequency response.
	ODUKPANI NIPP	5	GT3 & 4 2	225	225	GT3 & 4 2	225	197	GT1 - Out on fault. GT2 & 5 - Tripped on low gas pressure. GT3 & 4 - On frequency response.
	IHOVBOR NIPP	4	GT4 1	112.5	112.5	GT4 1	112.5	98.2	GT1 - Out due to gas station maintenance. GT4 - On manual adjustment to frequency. GT2 - Tripped on main transformer oil temperature 2nd phase trip alarm. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	0 0	0	0	0 0	0	0	GT2 - Out due to gas constraint.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	370	GT11, 12 & ST18 3	370	290	GT11 & 12 - Generation reduced due to low load demand by the Discos. ST18 - Generation limited due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	343	GT11 - Generation reduced due to low load demand by the Discos. GT12 & 13 - On frequency response.
	AFAM VI GAS/STEAM	4	GT12, 13 & ST10 3	490	490	GT13 1	150	135	GT11 - Out on type C inspection. GT12 & ST10 - Out due to low load demand by the Discos. GT13 - On frequency response.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	93.6	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - On manual adjustment to frequency.
	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	60.7	GT1, 3 & 5 3	60.7	60.7	GT2 - Tripped on high vibration. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	63.4	GT1, 2 & 4 3	63.4	63.4	GT3 - Out on fault.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out due to low gas pressure.
	SUB TOTAL	141	60	5611	5441.1	53	4364.4	3695.6	Frequency = 50.26Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SATURDAY 05/01/2019 FOR UNITS ON BILATERAL AGREEMENT

PARAS ENERGY	8	GT2 - 9	70	68.6	GT2 - 9	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	68	5681	5509.7	61	4,433.00	3,764.20	Frequency = 50.26Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - FRIDAY 04/01/2019						
		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	
U-STEEL	ON	0100HRS			23		132KV LINE OPENED ON LS	
PTCEXPRESS	ON	0100HRS			23		132KV LINE OPENED ON LS	
SANKYO	2	0900HRS			23		132KV LINE OPENED ON LS	
FEEDER 8	16	1000HRS			23		132KV LINE OPENED ON LS	
IKORODU	PULK IT	3	02:00		24		NIL	
	INDUSTRIAL	2	09:00		24		NIL	
	SPINTEX	10	05:00		24		NIL	
	DANGOTE	3	1300		24		NIL	
	LAND CRAFT	42	08:00		24		NIL	
ALAUUSA	TR4 15MVA						XING 2	
	TR5 -15MVA						KAM INTEGRATED	
	ALAUUSA						OLAM FLOUR MILLS	
M/LAND	PTC (MARYLAND)						LORDSMITH	
	TOTAL LOAD							

BILATERAL AGREEMENT LOAD DISPATCH									
60MW PARAS ENERGY GENERATION TO CEB OF FRIDAY 04/01/2019									
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK		
Ikeja West/Sakete 330kV line	70.2	03:00	9.2	12:00	23	1598.5	Out due to tripping of Ikorodu/Shagamu 132kV line.		
BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: FRIDAY 04/01/2019									
COMPANY NAME	VOLTAG E LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	46	07:00	0.1	19:00	24	5.2	SUPPLY NOT INTERRUPTED
KAM STEEL		25.0	0.6	18:00	0.2	01:00	24	5.2	SUPPLY NOT INTERRUPTED
ASHAKA CEMENT		0	6.6	20:00	1.2	15:00	24	105.9	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	19.8	21:00	3.3	22:00	24	333.9	SUPPLY NOT INTERRUPTED
XING 2		0	28.8	17:00	0.1	19:00	24	460.2	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	2.4	07:00	1.2	24:00	24	41.7	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	2.1	07:00	1	17:00	24	43.1	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.6	08:00	0.5	01:00	24	13.7	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: FRIDAY 04/01/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.34	102.39	377.02
TAIL WATER ELEVATION (METERS)	104.5	74.3	270.0
GROSS OPERATING HEAD (METERS)	36.84	28.09	107.02
AVERAGE TURBINE DISCHARGE (M3/SEC)	1066.00	1391.00	164.00
AVERAGE SPILLAGE (M3/SEC)	200.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1266.00	1391.00	164.00
COMPUTED INFLOW (M3/SEC)	1396.00	1322.00	0.00
STORAGE DIFFERENTIAL	130.00	-69	-164
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 FRIDAY 04/01/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	483.5	21:00	515.7	351.1	06:00
EKO					
IKEJA	506.0	10:00	751.56	350.2	17:00

2.0 GAS POSITION: SATURDAY 05/01/2019

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	282	1100		278	822
DELTA (GAS)	416	915		425	490
OMOTOSHO GAS	134	336.8		102.1	234.7
OMOTOSHO NIPP	114.7	500		120	380
OLORUNSOGO (GAS)	172.6	336		166.2	169.8
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	0	500		112.5	387.5
SAPELE STEAM	0	720		0	720
AFAM IV-V	50	300		0	300
AFAM VI	134	650		150	500
GEREGU GAS	270	435		435	0
GEREGU NIPP	181	435		145	290
OKPAI (GAS/STEAM)	216	480		370	110
ALAOJI NIPP	0	504		0	504
IHOV/BOR NIPP	100.1	337.5		112.5	225
IBOM	97.8	198		115	83
ODUKPANI NIPP		625		225	400
TOTAL	2168.2	9122.30		2756.3	6366

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : FRIDAY 04/01/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SATURDAY 05/01/2019 = 0MW, FREQUENCY 50.26Hz.

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

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Saturday 05/01/2019 as at 0600Hrs was = 1273MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO LINE CONSTRAINTS					
			0	0	0
			0	0	
			0	0	
			0	0	
4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Azura-Edo GT11	153	75	78	1123
2	Jebba 2G2 & 3	180	0	180	
3	Delta GT20	110	0	110	
4	Olorunsogo GT8	38	0	38	
5	Omotosho GT4	38	0	50	
6	Shiroro 411G1 & 4	300	120	180	
7	Okpai GT11 & 12	290	230	60	
8	Afam VI GT12 & ST10	350	0	350	
9	Geregu Gas GT11 - 13	435	358	77	
			0	0	
			0	0	
4.3 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G2	150	0	150	150
Grand Total					1273

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):

- 06:18 - 09:49Hrs, Alaoji NIPP GT2 tripped due to condensate problem. Load loss = 60MW
- 11:25Hrs, Paras Energy GTs 2 – 9 tripped due to the tripping of Ikorodu/Shagamu 132kV line. Total LHR = 68.8MW
11:57Hrs, GT2 was tied, 11:59Hrs, GT3 was tied, 12:03Hrs, GT4 was tied, 12:06Hrs, GT5 was tied, 12:10Hrs, GT6 was tied, 12:12Hrs, GT7 was tied, 12:15Hrs, GT8 was tied and 12:17Hrs, GT9 was tied.

5 (B) FORCED OUTAGES (TRANSMISSION):

- 06:55 - 07:45Hrs, Akure/Ado-Ekiti 132kV line CB tripped at Akure T/S on SEL 311C Relay: trip B & C zone 1. LHR = 14MW
- 11:22Hrs, Ikeja-West/Akangba 330kV Line 2 (cct W4L) CB tripped at Ikeja-West on the following relay indications.
Siprotec Relay: General trip B phase fault zone 1 trip, 50N/51N PU time = 165ms, trip time = 79ms, distance = 17.7km
Micom Relay: General trip, 3 phases and fault, distance zone 1 trip, carrier sent, started phase C-N, trip phases A, B & C, start element distance O/C start 1>2, 3 & 4, E/F start IN>1, distance trip zone 1, fault duration = 166.3ms, relay trip time = 133ms, fault location = 15.81km.
- 11:25 -11:53Hrs, Ikorodu/Shagamu 132kV line CB tripped at Ikorodu T/S on O/C Yellow phase. LHR = 38MW
- 14:22 – 15:17Hrs, Makurdi/Jos 330kV line 2 (cct A2S) CBs tripped at both ends on the following relay indications:
At Makurdi T/S:
Interposing relay: Yellow & Blue phases CB failure protection 3 phases,
Distance relay: 3 phases and line differential relay Blue phase. LHR = 249MW
At Jos T/S: Makurdi/Jos 330kV line tripped without relay indication. LHR = 249MW
- 14:24 – 14:54Hrs, Mando/Jos 330kV line (cct M2S) CBs tripped at both ends on the following relay indications:
At Mando T/S:
Distance protection relay: Trip Blue phase, neutral zone 3, V. T. fuse failure, DEF carrier sent, MVAJ 21- 86A, B & C, lock out trip.
At Jos T/S: Mando/Jos 330kV line tripped without relay indication. LHR = 55MW
- 14:24 through 24:00Hrs, Jos T/S 150MVA 330/132/33kV transformer T2 primary and secondary CBs tripped on REF and O/C protection relay.
SEL relay 787: Trip REF flag, GND/Nuetral O/C flag. LHR = 77MW

5 (C) PLANNED OUTAGES:-

- 09:10 - 19:56Hrs, Kainji 1G12 was shut down for maintenance. Load loss = 89MW
- 17:50 through 24:00Hrs, Ihovbor NIPP GT1 was shut down for maintenance work. Load loss = 84.2MW

5 (D) URGENT OUTAGES:-

- 11:40 through 24:00Hrs, Sapele NIPP GT3 was shut down due to oil leakage on the load line edge. The load was transferred to GT2
- 13:09 – 16:02Hrs, Maryland T/S 60MVA 132/33kV transformer T2 was taken out to top up low oil in the conservator tank to normal. Load loss = 36MW
- 21:35 through 24:00Hrs, Rivers GT1 was shut down due to low gas pressure. Load loss = 90MW

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 line was opened on frequency control.

- 15:20 - 15:26Hrs, Osogbo/Akure 132kV line. Load loss = 61MW. Frequency was 49.70Hz.

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, D2K, K3U & K4U

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

- 6 WEATHER REPORT:- NIL

7 INTERNATIONAL LINES:-

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

Maximum load - 292MW at 21:00Hrs.

Minimum load - 230MW at 02:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 88.0MW at 20:00Hrs.

Minimum load - 46.0MW at 04:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 33.4MW at 20:00Hrs.

Minimum load - 14.5MW at 07:00Hrs.

8 MISCELLANEOUS:-

- 08:52Hrs, Trans-Amadi GT4 was tied. The unit was out since the system collapse of 03/01/2019.
- 08:59Hrs, Geregu NIPP GT23 was tied to swap with GT21.
- 09:07Hrs, Jebba 2G3 was tied. The unit was out due to low load demand by the Discos.
- 09:18Hrs, Jebba 2G2 was tied. The unit was out due to low load demand by the Discos.
- 09:19Hrs, Geregu NIPP GT21 was shut down. The load was transferred to GT23.
- 09:31Hrs, Jebba 2G3 was shut down due to low load demand by the Discos. Load loss = 91MW
- 10:00Hrs, Lokoja/Gwagwalada 330kV line 2 (cct L7G) was restored. The line was out on voltage control.

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	6	2
330kV	19	7	12
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:

- 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.
- 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.

- 8 10:08Hrs, Jebba/Osogbo 330kV line 2 (cct J2H) CB was restored on soak from Osogbo T/S up to the point of the collapsed tower.
- 9 10:47Hrs, Sapele NIPP GT2 was tied to swap with GT3
- 10 13:15 - 19:30Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 80MW
- 11 14:57- 15:22Hrs, Jebba 2G3 was shut down due to low load demand by the Discos. Load loss = 78MW
- 12 15:12 - 19:06Hrs, Delta GT20 was shut down due to low load demand by the Discos. Load loss = 62MW
- 13 15:30Hrs, Gombe/Damaturu/Maiduguri 330kV line was restored. It was out due to the tripping of Mando/Jos and Makurdi/Jos 330kV lines
- 14 17:39Hrs, Ihovbor NIPP GT4 was tied. the unit was out due to gas constraint.
- 15 23:30Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 86MW.

**** 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 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/tire 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 & Alaaji 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

