

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF THURSDAY 29/11/2018

FOR: EVENTS OF WEDNESDAY 28/11/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,900	21:30	28/11/2018
GENERATION CAPABILITY	7169.5	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5121.3	-do-	-do-
PEAK GENERATION	4462.1	-do-	-do-
LOWEST GENERATION	3562.4	04:00	28/11/2018
8-HOURLY DURATION PEAK	4043.8	0100-0800	-do-
	4158.1	0900-1600	-do-
	4462.1	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	351	Lokoja T/S	01:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso T/S	05:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.83	13:20
LOWEST FREQUENCY	49.86	20:15

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Sept, 2018		No. of days since last total collapse: 69													
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 230													
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				10	
	Partial	0	0	0	1	0			0					1	

1.5 BREAKDOWN OF PEAK & OFF PEAK GENERATION (NATIONAL PEAK & OFF PEAK)

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	421	367
2 JEBBA	HYDRO	444	431
3 SHIRORO	HYDRO	431	175
4 EGBIN ST2 - 5	STEAM	357	352
5 SAPELE	STEAM	50	50
6 DELTA	GAS	440	445
7 AFAM IV-V	GAS	0	0
8 GEREKU GAS	GAS	404	243
9 OMOTOSHO GAS	GAS	131.3	134
10 OLORUNSOGO GAS	GAS	161.5	165.1
11 GEREKU NIPP	GAS	131	122
12 SAPELE NIPP	GAS	0	0
13 ALAOJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	0	0
15 OMOTOSHO NIPP	GAS	108.1	98.3
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	106.8	84
18 OKPAI	GAS	319	284
19 AFAM VI	GAS	0	0
20 IBOM POWER	GAS	107.9	93.3
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	77.7	74.8
24 TRANS AMADI	GAS	41.8	37.7
25 RIVERS IPP	(GAS)	0	0
26 AZURA - EDO IPP	(GAS)	445	225
27 EGBIN ST6	(GAS)	115	115
28 PARAS ENERGY	(GAS)	67	66.2
29 GBARAIN NIPP	GAS	103	0
TOTAL		4462.1	3562.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED	AV.ENERGY GENERATED	ENERGY SENT OUT	AV. ENERGY SENT OUT
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	10167.00	423.63	10151.30	422.97
2 JEBBA	HYDRO	10368.00	432.00	10344.72	431.03
3 SHIRORO	HYDRO	8717.00	363.21	8688.47	362.02
4 EGBIN ST2 - 5	STEAM	8534.00	355.58	8054.60	335.61
5 SAPELE	STEAM	1085.40	45.23	1037.60	43.23
6 DELTA	GAS	10395.11	433.13	10232.40	426.35
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREKU GAS	GAS	8213.80	342.24	8183.74	340.99
9 OMOTOSHO GAS	GAS	3158.00	131.58	3134.40	130.60
10 OLORUNSOGO GAS	GAS	3873.69	161.40	3843.96	160.17
11 GEREKU NIPP	GAS	2750.00	114.58	2736.79	114.03
12 SAPELE NIPP	GAS	0.00	0.00	0.00	0.00
13 ALAOJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	2399.20	99.97	2372.40	98.85
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2300.00	95.83	2284.16	95.17
18 OKPAI	GAS	6705.00	279.38	6572.80	273.87
19 AFAM VI	GAS	0.00	0.00	0.00	0.00
20 IBOM	GAS	2213.00	92.21	2221.75	92.57
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	8378.80	349.12	8352.10	348.00
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1558.77	64.95	1523.12	63.46
25 TRANS AMADI	GAS	777.30	32.39	760.30	31.68
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	2747.00	114.46	2608.50	108.69
28 PARAS ENERGY	GAS	1551.80	64.66	1544.00	64.33
29 GBARAIN NIPP	GAS	1171.10	48.80	1159.80	48.33
TOTAL		97,063.97	4,044.33	95,806.91	3,991.95

1.7A GENERATION POSITION AT 06:00HRS OF THURSDAY 29/11/2018

	STATIONS	NO OF INSTALLED UNITS	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 50.32Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	420	1G5, 6, 11 & 12 4	420	397	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	476	470	2G1 - 5 5	470	440	2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1, 2 & 4 3	450	450	411G1, 2 & 4 3	450	331	411G3 - Out on fault. 411G4 - Generation reduced due to water management.
	EGBIN STEAM	5	ST2, 4, 5 & 6 4	880	800	ST2, 4, 5 & 6 4	800	472	ST1 - Out due to undisclosed fault since 04/09/2018. ST3 - Out on high vibration since 19th June 2017. Generation reduced due to gas constraint.
	SAPELE (STEAM)	6	ST2 1	120	60	ST2 1	60	50	ST1 - Tripped on low drum level. ST3 - Out on loss of excitation. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9 - 13, 15, 16 & 19 & 20 10	545	545	GT7, 9 - 13, 15, 16, 19 & 20 10	545	457	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. Generation reduced due to gas constraint.
	AFAM IV & V (GAS)	8	GT17 & 18 2	150	120	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13,14 & 16 - Out on blade failure. GT17 & 18 - Out due to maintenance of gas station. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 - 13 3	435	364	GT13 - Generation reduced due to inlet gas valve controller problem.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2, 6 & 7 4	152	134.3	GT3-5 & 8 - Out due to gas constraint. Generation reduced due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 2, 5, 6 & 8 5	190	166.1	GT3, 4 & 7 - Out due to gas constraint. Generation reduced due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT22 1	145	130	GT21 - Out on maintenance. GT23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 & 3 2	225	225	0 0	0	0	GT1 & 3 - Out due to low gas pressure. GT2 - Out on maintenance. GT4 - Out due to high air filter differential pressure.
	ALAOJI NIPP GAS	4	GT2 1	120	120	0 0	0	0	GT1 - Out on maintenance. 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	GT1 & 2 2	250	240	0 0	0	0	GT1 & 2 - Shut down due to low gas pressure. GT3 - Out due to maintenance. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1 - 4 4	500	480	GT4 1	120	102.5	GT1 - 3 - Out due to gas constraint.
	ODUKPANI NIPP	5	0 0	0	0	0 0	0	0	GT1 & 2 - Out on fault. GT3 & 5 - Out due to gas leakage. GT4 - Tripped on main transformer neutral O/C and HV protection.
	IHOVBOR NIPP	4	GT1, 2 & 4 3	337.5	337.5	GT1 1	115	103	GT1 - On manual adjustment to frequency. GT2 & 4 - Out due to gas constraint. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	120	120	GT2 1	112.5	91.7	GT2 - On manual adjustment to frequency.
IPP	OKPAI GAS/STEAM	3	GT11, 13 & ST18 3	370	370	GT11, 12 & ST18 3	370	233	GT12 - Generation reduced due to low load demand by the Discos. ST18 - Generation reduced due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	387	Available units on bar.
	AFAM VI GAS/STEAM	4	GT12, 13 & ST10 3	500	490	0 0	0	0	GT11 - Out on type C inspection. GT12, 13 & ST10 - Out due to maintenance at gas station.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	93.8	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, 2, 3 & 5 4	100	80	GT1, 2, 3 & 5 4	80	79.7	GT1 & 3 - Generation reduced due to gas constraint. GT4 - Out on major overhaul. GT6 - Out on maintenance.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	70	GT1 & 4 2	41.7	41.7	GT2 - Out due to gas constraint. GT3 - Out on fault.
	RIVERS	1	GT1 1	160	160	0 0	0	0	GT1 - Out due to gas constraint
SUB TOTAL	140	81	7791.5	7466.5	56	5082.2	4073.8	Frequency = 50.32Hz.	

1.7B **GENERATION POSITION AT 06:00HRS OF THURSDAY 29/11/2018 FOR UNITS ON BILATERAL AGREEMENT**

PARAS ENERGY	8	GT2 - 9 8	70	67.8	GT2 - 9 8	67.8	67.8	Available units on bar.
SUB TOTAL	8	8	70	67.8	8	67.8	67.8	
GRAND TOTAL	148	89	7861.5	7534.3	64	5,150.00	4,141.60	Frequency = 50.32Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - WEDNESDAY 28/11/2018							
		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			22		FEEDER WAS TAKEN OUT ON PERMIT	
	PTCEXPRESS	ON	0100HRS			22		FEEDER WAS TAKEN OUT ON PERMIT	
	SANKYO	ON	0100HRS			24		NIL	
	FEEDER 8	17	1000HRS			24		NIL	
IKORODU	PULK IT	3	0700HRS			24		NIL	
	INDUSTRIAL	9	0800HRS			24		NIL	
	SPINTEX	12	0400HRS			24		NIL	
	DANGOTE	ON	0100HRS			24		NIL	
	LAND CRAFT	40	1700HRS			24		NIL	
ALAUUSA	TR4 15MVA	8.6	1500HRS			24		NIL	
	TR5 -15MVA	6.2	14HRS			24		NIL	
	ALAUUSA	17.5	1000HRS			24		NIL	
M/LAND	PTC (MARYLAND)	17	0800HRS			22		OUT DUE TO JOB ON RED PHASE SECONDARY CT OF T2 60MA 132/33KV	
	TOTAL LOAD	130.3							

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF WEDNESDAY 28/11/2018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	67	05:00	40.5	14:00	24	1527	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: WEDNESDAY 28/11/2018									
COMPANY NAME	VOLTAGE LEVEL	CONTRACTUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	0.1	01:00	0.1	24:00	17	2.4	SUPPLY NOT INTERRUPTED
KAM STEEL		25.0	0.6	17:00	0.2	01:00	24	6.3	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0	10.1	22:00	4.4	10:00	24	188.4	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0	19.8	17:00	0.1	10:00	24	367.35	SUPPLY NOT INTERRUPTED
XING 2		0	25.25	16:00	0.1	10:00	24	481.4	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15	4.6	19:00	1.7	15:00	24	64.3	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3	2.5	10:00	0.1	19:00	24	29	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.6	11:00	0.5	01:00	24	13.4	

1.8 HYDROLOGICAL DATA: THURSDAY 29/11/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.57	102.17	380.09
TAIL WATER ELEVATION (METERS)	104.4	74.8	270.8
GROSS OPERATING HEAD (METERS)	37.17	27.37	109.29
AVERAGE TURBINE DISCHARGE (M3/SEC)	1263.00	1752.00	381.00
AVERAGE SPILLAGE (M3/SEC)	201.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1464.00	1752.00	381.00
COMPUTED INFLOW (M3/SEC)	1332.00	1474.00	52.00
STORAGE DIFFERENTIAL	-132.00	-278	-329
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 WEDNESDAY 28/11/2018

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	506.2	12:00	479.69	378.1	04:00
EKO	444.0	16:00	558.83	269.3	08:00
IKEJA	564.5	16:00	630.68	356.9	22:00

2.0 GAS POSITION: THURSDAY 29/11/2018

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	472	1100		800	300
DELTA (GAS)	457	915		545	370
OMOTOSHO GAS	134.3	336.8		152	184.8
OMOTOSHO NIPP	102.5	500		120	380
OLORUNSOGO (GAS)	166.1	336		190	146
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	0	500		0	500
SAPELE STEAM	50	720		60	660
AFAM IV-V	0	300		0	300
AFAM VI	0	650		0	650
GEREGU GAS	364	435		435	0
GEREGU NIPP	130	435		145	290
OKPAI (GAS/STEAM)	233	480		370	110
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	103	337.5		112.5	225
IBOM	93.8	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2305.7	9122.30		3044.5	6077.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : WEDNESDAY 28/11/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 29/11/2018 = 0MW. FREQUENCY 50.32Hz.

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	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Thursday 29/11/2018 as at 0600Hrs was = 2768MW.

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Afam IV GT17 & 18	120	0	120	2586
2	Delta GT15, 16, 19 & 20	425	357	68	
3	Geregu NIPP GT23	145	0	145	
4	Alaoji NIPP GT2	120	0	120	
5	Omotosho GT1 - 8	304	134.3	169.7	
6	Olorunsogo GT1 - 8	304	166.1	137.9	
7	Afam VI GT12, 13 & ST10	490	0	490	
8	Olorunsogo NIPP GT1 & 2	240	0	240	
9	Trans-Amadi GT1, 2 & 4	60	41.7	18.3	
10	Egbin ST2, 4, 5 & 6	800	472	328	
11	Rivers GT1	160	0	160	
12	Omoku GT1 & 3	40	35.9	4.1	
13	Omotosho NIPP GT1 - 3	360	0	360	
14	Ihovbor GT2 & 4	225	0	225	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1620.74MMSCF OF GAS (EQUIVALENT TO 6077.8MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
			0	0	0
			0	0	
			0	0	
			0	0	
			0	0	
4.3 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Okpai GT12	150	60	90	90
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
4.1 DUE TO WATER MANAGEMENT:					
1	Shiroro 411G4	150	58	92	92
					0
Grand Total					2768

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION): Nil.

- 13:50Hrs, Paras Energy GTs 4, 5 & 6 tripped due to tripping of 45MVA 33/132kV generator transformer secondary CB on E/F. LHR = 25.2MW. 14:57Hrs – GT4 was tied, 14:58Hrs – GT5 was tied & 15:01Hrs – GT6 was tied.

5 (B) FORCED OUTAGES (TRANSMISSION):

- 02:58 - 17:34Hrs, Afam 1 T/S 150MVA 330/132/33kV transformer T1B primary and secondary CBs tripped on O/C L1, L2 & E/F. LHR = 50MW.
- 02:58 - 16:02Hrs, Afam/IPP/Port Harcourt 132kV line 2 CB tripped at Afam T/S on instantaneous O/C & E/F, and time delay. LHR = 58MW. 03:42Hrs, Trial restoration failed at Afam T/S on the same relay indication.
- 02:58 – 03:19Hrs, Afam/Alaoji 132kV line 2 CB tripped at Afam T/S on O/C Red & Yellow Phases. LHR = 21.2MW.
- 04:49 – 04:54Hrs, Osogbo/Ilesha/lfe 132kV line CB tripped at Osogbo T/S on BBC Relay – short circuit Blue Phase, E/F. LHR = 46MW.
- 04:49 – 04:56Hrs, lfe/Ondo 132kV line tie CB tripped at lfe T/S on Optimho Relay – DEF, location = 123.6km, period = 91ms. LHR = 28MW.
- 08:52 through 24:00Hrs, Okpilla T/S 60MVA 132/33kV transformer T2 primary and secondary CBs tripped on differential, and REF. No load interruption as the transformer was on soak. Note: inspection revealed shattered primary Blue Phase lightning arrester.
- 08:53 – 10:02Hrs, Okenne T/S 30MVA 132/33kV transformer T1 primary and secondary CBs tripped on differential relay. LHR = 0.1MW.
- 11:47 – 11:53Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line CB tripped at Ayede T/S on the following relay indication
Optimho Relay: DEF start,
Siemens Relay: O/C 3-Phases & E/F. LHR = 70MW.
- 12:54 – 13:09Hrs, Osogbo/Ilesha/lfe 132kV line CB tripped at Osogbo T/S on
BBC Relay: Short circuit Red & Blue Phases, time delay O/C Red Phase and E/F. LHR = 40MW.
- 12:54 – 13:10Hrs, lfe/Ondo 132kV line CB tripped at lfe T/S on Optimho Relay: DEF, location = 34.6km, also protection trip alarm came up. LHR = 8MW.
- 13:18 – 13:40Hrs, Ikeja West/Sakete 330kV line (cct NW1BS) CB tripped at Ikeja West T/S on the following relay indications:
Siprotec Relay: General trip 3-Phases, zone 2 trip Back up O/C, 5X-BPUIP Phase C, PU time = 473ms, trip time = 405ms and distance = 56.7km.
Micom Relay: General trip, started phase A, B & C, O/C start I>124, O/C trip i>2, fault duration = 480ms, relay trip time = 79.51ms, Back up O/C.
LHR = 275MW.

5 (C) PLANNED OUTAGES:-

- 09:12 – 17:42Hrs, Afam IV 330kV Bus 2 was taken out to enable Valens contractor install a set of isolator on Afam IV 330kV 16AC Diameter. No load loss as Bus 1 was in service.
- 11:15 – 12:44Hrs, Benin T/S 150MVA 330/132/33kV transformer 6T2 was taken out to seal point of oil leakage on top of the diverter switch of the transformer. No load interruption as 150MVA transformer 6T1 was in service.

5 (D) URGENT OUTAGES:-

- 10:35 – 12:25Hrs, Jos T/S 60MVA 132/33kV transformer T1 was taken out to seal oil leakage on the secondary Blue Phase bushing. No load loss as the transformer was on soak.
- 11:16 – 11:45Hrs, Gombe T/S 45MVA 132/33kV transformer T1 was taken out to top up low oil in the Red Phase pole of the primary CB. Load loss = 6.9MW.
- 11:50 – 12:58Hrs, Okenne T/S 60MVA 132/33kV transformer T2 was taken out to treat hot spot on the secondary isolator clamp. Load loss = 12MW.
- 12:35 – 15:24Hrs, Afam/IPP/Port Harcourt 132kV line 1 was taken out as an additional apparatus to remove hanging corona ring touching the Yellow Phase composite insulator on tower #7 on Afam/IPP/Port Harcourt 132kV line 2. Load loss = 78MW.
- 12:39 – 12:55Hrs, Jebba/Osogbo 330kV line 1 (cct J1H) was taken out to build up low SF6 gas of the line GCB to normal at Osogbo T/S. No load interruption as ccts J3G & H3G were in service.
- 12:46 – 16:49Hrs, Akangba/Isolo 132kV line 1 was taken out to replace burnt line isolator finger at Akangba T/S. No load loss as the line was on soak.
- 12:48 – 15:07Hrs, Effurun T/S 60MVA 132/33kV transformer T21 was taken out to treat hot spot on the terminal clamp. Load loss = 29.8MW.
- 14:50 – 15:28Hrs, Kumbotso/Kankia/Katsina 132kV line CB was taken out to isolate Kankia T/S 30MVA 132/33kV transformer T2 due to serious arcing observed on the secondary Blue Phase bushing bolts and nuts as the primary CB did not respond to opening signal. Load loss = 30MW.

5 (E) EMERGENCY OUTAGES:-

The under mentioned lines were opened for frequency control.

- 20:15 – 20:23Hrs, Osogbo/Offa/Omuaran 132kV line. Load loss = 29MW. Frequency was 49.86Hz.
- 20:17 – 20:30Hrs, Akangba/Itire 132kV line 2. Load loss = 34MW. Frequency was 49.98Hz.

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, 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 - 299MW at 17:00Hrs.
Minimum load - 205MW at 01:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 108MW at 16:00Hrs.
Minimum load - 65MW at 07:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 32.2MW at 20:00Hrs.
Minimum load - 15.8MW at 11:00Hrs.

8 MISCELLANEOUS:-

- 04:50Hrs, Azura-Edo increased generation on one unit to maximum to improve system frequency.
- 09:32Hrs, Azura-Edo increased generation by 50MW to improve system frequency.
- 10:52Hrs, Gbarain NIPP GT2 was tied. The unit was out due to gas constraint.
- 16:52Hrs, Omoku GT2 was tied. The unit was out on maintenance.
- 16:57Hrs, Omoku GT5 was tied. The unit was out on maintenance.
- 18:46Hrs, Trans-Amadi GT2 was tied. The unit was out due to gas constraint.

***** LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.

***** THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

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).

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	26
OPTIC FIBRE	13	10
PLS	14	4

11 SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	7	12
132kV	102	83	19

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 transformers are protected by Nkalagu 132kV line CB.

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.

- 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.

e AGM (S/O) - 08056002757, CUG: 08129458475

SHIRORO REGION

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

