

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SUNDAY 04/11/2018

FOR: EVENTS OF SATURDAY 03/11/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,900	21:45	03/11/2018
GENERATION CAPABILITY	7524	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5189.5	-do-	-do-
PEAK GENERATION	4697.0	-do-	-do-
LOWEST GENERATION	3540.3	04:00	03/11/2018
8-HOURLY DURATION PEAK	3859.29	0100-0800	-do-
	3889.3	0900-1600	-do-
	4697	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	361	Omosho T/S	17:00
LOWEST VOLTAGE FOR THE DAY	299	Akangba T/S	17:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.79	15:31
LOWEST FREQUENCY	50.22	13:03

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Sept, 2018		No. of days since last total collapse: 43												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 202												
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	391	369
2 JEBBA	HYDRO	467	352
3 SHIRORO	HYDRO	581	304
4 EGBIN ST2 - 5	STEAM	450	338
5 SAPELE	STEAM	47	40
6 DELTA	GAS	410	343
7 AFAM IV-V	GAS	65	61
8 GEREGU GAS	GAS	134	86
9 OMOTOSHO GAS	GAS	69.8	69.8
10 OLORUNSOGO GAS	GAS	0	0
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	147.5	139.5
13 ALAOJI NIPP	GAS	109.5	70.4
14 OLORUNSOGO NIPP	GAS	106.9	75
15 OMOTOSHO NIPP	GAS	204.5	88.8
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	107.8	142.2
18 OKPAI	GAS	244	176
19 AFAM VI	GAS	120	112
20 IBOM POWER	GAS	80.2	65.2
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	56.2	54.4
24 TRANS AMADI	GAS	42.7	41.1
25 RIVERS IPP	(GAS)	145	80
26 AZURA - EDO IPP	(GAS)	394	225
27 EGBIN ST6	(GAS)	167	169
28 PARAS ENERGY	(GAS)	67.8	68.6
29 GBARAIN NIPP	GAS	89.1	70.3
TOTAL		4697	3540.3

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9548.00	397.83	9532.70	397.20
2 JEBBA	HYDRO	9255.00	385.63	9237.80	384.91
3 SHIRORO	HYDRO	8811.00	367.13	8783.02	365.96
4 EGBIN ST2 - 5	STEAM	8952.00	373.00	8635.30	359.80
5 SAPELE	STEAM	931.00	38.79	873.30	36.39
6 DELTA	GAS	9501.88	395.91	9301.60	387.57
7 AFAM IV-V	GAS	1407.00	58.63	1400.65	58.36
8 GEREGU GAS	GAS	2640.20	110.01	2620.25	109.18
9 OMOTOSHO GAS	GAS	2239.00	93.29	2217.00	92.38
10 OLORUNSOGO GAS	GAS	154.06	6.42	140.68	5.86
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	3714.98	154.79	3695.59	153.98
13 ALAOJI NIPP	GAS	1785.44	74.39	1785.43	74.39
14 OLORUNSOGO NIPP	GAS	2367.80	98.66	2319.50	96.65
15 OMOTOSHO NIPP	GAS	3652.20	152.18	3628.90	151.20
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2872.62	119.69	2850.91	118.79
18 OKPAI	GAS	4568.00	190.33	4446.90	185.29
19 AFAM VI	GAS	2698.26	112.43	2604.73	108.53
20 IBOM	GAS	1455.38	60.64	1447.00	60.29
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6657.05	277.38	6634.90	276.45
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1292.30	53.85	1261.64	52.57
25 TRANS AMADI	GAS	921.80	38.41	900.80	37.53
26 RIVERS IPP	GAS	2361.80	98.41	2342.60	97.61
27 EGBIN ST6	STEAM	3442.00	143.42	3260.40	135.85
28 PARAS ENERGY	GAS	1624.80	67.70	1620.00	67.50
29 GBARAIN NIPP	GAS	1791.00	74.63	1776.20	74.01
TOTAL		94,644.57	3,943.52	93,317.80	3,888.24

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 04/11/2018

	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 50.35Hz.	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	475	475	2G1 - 5 5	445	445	2G6 - Out due to burnt generator winding and AVR. Available units on bar.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 4 4	600	230	411G1 - 4 - Generation reduced due to low load demand by the Discos.
	EGBIN STEAM	5	ST2, 4 & 5 3	660	600	ST2, 4 & 5 3	500	339	ST1 - Out due to undisclosed fault since 04/09/2018. ST3 - Out on high vibration since 19th June 2017. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	ST2 1	120	60	ST2 1	60	45	ST1 & 3 - Tripped on low drum level. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point. Generation reduced due to low load demand by the Discos.
	DELTA (GAS)	18	GT7, 9 - 13, 15, 16 & 19 & 20 10	540	540	GT7, 9 - 13, 15, 16 & 19 9	424	424	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. GT20 - Out due to low load demand by the Discos.
	AFAM IV & V (GAS)	8	GT18 1	120	120	GT18 1	65	48	GT1 - 12 - De-commissioned and scrapped. GT13,14 & 16 - Out on blade failure. GT17 - Out due to technical issue. GT19 & 20 - Awaiting major overhaul. Generation reduced due to low load demand by the Discos.
	GEREGU GAS	3	GT11 1	145	145	GT11 1	145	101	GT12 & 13 - Tripped on natural gas valve position.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 6 & 8 3	114	106.4	GT1, 3 - 5 & 7 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos.
	OLORUNSOGO GAS	8	GT1 - 8 8	304	304	0 0	0	0	GT1 - 8 - Out due to maintenance work at gas station.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	0 0	0	0	GT21 - Out on maintenance. GT22 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1 - 4 4	450	450	GT1 & 3 2	225	119.2	GT2 - Out due to low load demand by the Discos. GT3 - Generation reduced due to air inlet filter problem. GT4 - Out due to gas constraint.
	ALAOJI NIPP GAS	4	GT1 & 2 2	240	240	GT2 1	120	70.3	GT1 - Out due to low load demand by the Discos. GT2 - Generation reduced 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	GT1 & 2 2	250	240	GT2 1	120	90.9	GT1 - Out due to low load demand by the Discos. GT3 - Out on maintenance. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance. Generation reduced due to low load demand by the Discos.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT1 & 2 2	240	153.5	GT4 - Out due to low load demand by the Discos. GT3 - Out on lube oil leakage.
	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	GT2 & 4 2	225	225	GT4 1	112.5	80.2	GT1 - Out on fault. GT4 - Generation reduced due to low load demand by the Discos. GT2 - Out due to low load demand by the Discos. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	115	112.5	GT2 1	112.5	78.4	Generation reduced due to low load demand by the Discos.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	370	370	GT11, 12 & ST18 3	290	239	GT11 - Generation reduced due to gas constraint. ST18 - Generation reduced due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	225	GT11- 13 - Generation reduced due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 1	150	126	GT12 - Out due to low load demand by the Discos. GT13 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	0 0	0	0	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Out due to tripping of Aba/Itu 132kV line.
	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	GT2 & 5 2	50	50	GT2 & 5 2	40.7	40.7	GT1 - Out on fault. GT3 - Tripped on over speed. GT4 - Out on major overhaul. GT6 - Out on maintenance. Available units on bar.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1 & 2 2	40	30.4	GT4 - Tripped on low gas pressure. GT3 - Out on fault.
	RIVERS	1	GT1 1	160	160	GT1 1	160	80	Generation reduced due to low load demand by the Discos.
	SUB TOTAL	140	78	7566	7341.5	51	4844.7	3469	Frequency = 50.35Hz.

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 04/11/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	ST6	220	167	ST6	167	167	Available unit on bar.
		1			1			
PARAS ENERGY	8	GT2 - 9	70	67	GT2 - 9	67	67	Available units on bar.
		8			8			
SUB TOTAL	9	9	290	234	9	234	234	
GRAND TOTAL	149	87	7856	7575.5	60	5,078.70	3,703.00	Frequency = 50.35Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 03/11/018							
		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	
	PTCEXPRESS	ON	0100HRS			24		NIL	
	SANKYO	ON	0100HRS			24		NIL	
	FEEDER 8	14	1300HRS			24		NIL	
IKORODU	PULK IT	1	0100HRS			24		NIL	
	INDUSTRIAL	7	0100HRS			24		NIL	
	SPINTEX	3	0100HRS			24		NIL	
	DANGOTE	ON	0100HRS			24		NIL	
	LAND CRAFT	16	0400HRS			24		NIL	
ALAUSA	TR4 15MVA	5.5	1100HRS			24		NIL	
	TR5 -15MVA	3.7	1000HRS			24		NIL	
	ALAUSA	13.8	1100HRS			24		NIL	
M/LAND	PTC (MARYLAND)	18	1000HRS			24		NIL	
	TOTAL LOAD								

BILATERAL AGREEMENT LOAD DISPATCH							
60MW PARAS ENERGY GENERATION TO CEB OF SATURDAY 03/11/018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	69.4	03:00	66.2	08:00	24	1627.2	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: SATURDAY 03/11/018									
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	50	22:00	0.1	01:00	24	363.5	SUPPLY NOT INTERRUPTED
KAM STEEL		15.0	5.9	23:00	1	11:00	24	62.5	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0.0	10.3	23:00	5.4	19:00	24	175.9	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0.0	1.2	01:00	0.1	03:00	24	7.9	SUPPLY NOT INTERRUPTED
XING 2		0.0	1.6	20:00	0.6	15:00	24	29.2	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15.0	4.3	22:00	1.4	10:00	24	65.5	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.3	22:00	0.2	24:00	24	28.9	SUPPLY NOT INTERRUPTED
LORDSMITH		0	0.5	01:00			24		SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: SUNDAY 04/11/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.73	103.25	381.86
TAIL WATER ELEVATION (METERS)	105.25	74.6	270.5
GROSS OPERATING HEAD (METERS)	36.48	28.65	111.36
AVERAGE TURBINE DISCHARGE (M3/SEC)	1193.00	1463.00	399.00
AVERAGE SPILLAGE (M3/SEC)	259.00	7.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1452.00	1470.00	399.00
COMPUTED INFLOW (M3/SEC)	1891.00	1644.00	242.00
STORAGE DIFFERENTIAL	439.00	174	-157
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 SATURDAY 03/11/018

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	479.2	22:00	538.31	297.6	13:00
EKO					
IKEJA					

2.0 GAS POSITION: SUNDAY 04/11/2018

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	226	1100		500	600
DELTA (GAS)	430	915		424	491
OMOTOSHO GAS	0	336.8		114	222.8
OMOTOSHO NIPP	0	500		240	260
OLORUNSOGO (GAS)	185.2	336		0	336
OLORUNSOGO NIPP	151.9	750		120	630
SAPELE NIPP	112.9	500		225	275
SAPELE STEAM	50	720		60	660
AFAM IV-V	63	300		65	235
AFAM VI	117	650		150	500
GEREGU GAS	122	435		145	290
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	229	480		290	190
ALAOJI NIPP	79.9	504		120	384
IHOVBOR NIPP	150.1	112.5		112.5	0
IBOM	0	198		0	198
ODUKPANI NIPP	0	625		0	625
TOTAL	1917	8897.30		2565.5	6331.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SATURDAY 03/11/018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 04/11/2018 = 0MW. FREQUENCY 50.35Hz.

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	Omosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Sunday 04/11/2018 as at 0600Hrs was = 2999.3MW.					
S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Okpai GT11	145	70	75	817.5
2	Afam VI GT13 & ST10	340	0	340	
3	Geregu NIPP GT22 & 23	290	0	290	
4	Sapele NIPP GT4	112.5	0	112.5	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1688.48MMSCF OF GAS (EQUIVALENT TO 6331.8MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom GT3	115	0	115	115
				0	
				0	
				0	
4.3 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Ihovbor GT2 & 4	225	80.2	144.8	2066.8
2	Azura-Edo GT11 - 13	461	225	236	
3	Afam IV GT18	65	48	17	
4	Shiroro 411G1 - 4	600	230	370	
5	Delta GT20	110	0	110	
6	Alaoji NIPP GT1 & 2	240	70.3	169.7	
7	Afam VI GT12	150	0	150	
8	Olorunsogo NIPP GT1 & 2	240	90.9	149.1	
9	Egbin ST2, 4 & 5	500	339	161	
10	Omosho NIPP GT4	120	0	120	
11	Gbarain NIPP GT2	112.5	78.4	34.1	
12	Sapele NIPP GT2	112.5	0	112.5	
13	Rivers GT1	160	80	80	
14	Omosho Gas GT1 - 8	304	106.4	197.6	
15	Sapele Steam ST2	60	45	15	
4.1 DUE TO WATER MANAGEMENT:					
					0
Grand Total					2999.3

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):

- 1 10:03through 24:00Hrs, Ihovbor NIPP GT1 tripped on startup fuel flow excessive. LHR = 76.5MW
- 2 16:25 through 24:00Hrs, Trans-Amadi GT4 tripped on low gas pressure. LHR = 12MW
- 3 21:51 through 24:00Hrs, Ibom GT3 tripped due to tripping of Aba/ltu 132kV line. LHR = 85MW

5(B) FORCED OUTAGES (TRANSMISSION):

- 1 12:24 - 13:34Hrs, Apo T/S 100MVA 132/33kV transformer T3 secondary CB tripped on O/C. LHR = 25.5MW
- 2 14:02 - 14:20Hrs, Benin/Ajaokuta 330kV line 1 (cct B11J) CBs tripped at both ends on the following relay
At Benin T/S:
ABB relay: Trip, start L1, start PE, DEF trip, DEF-CS, trip-trip, trip-TRL (1,2 & 3), PHS-SRFW (L1, PE) EFC-CS, TEF-trip, TOC-STL1,
Auxiliary relay: MVAJ K86A, B & C
At Ajaokuta T/S:
ABB relay: Trip, DEF trip, trip-trip, trip-TRL1, 2 & 3, EFC-CS, TEF-trip.
Auxiliary relay: K86 A, B & C. No load loss as cct B12J was in service.
- 3 15:15 - 15:32Hrs, Osogbo/Akure/Ado-Ekiti 132kV line CB tripped at Osogbo T/S on O/C 3 phases. LHR = 62MW
- 4 16:31 - 17:01Hrs, Egbin/Ikeja-West 330kV line (cct N6W) CB tripped at Ikeja-West T/S on the following relay indications:
Siprotec relay: General trip, RPH trip, zone 1 trip.
Micom relay: General trip, RPH fault distance Z1 trip, SNTP failure, Active group 1, started phase A -N, start elements distance, O/C start 1>2 E/F start INI, distance trip Z1. NO load loss as ccts B6N and B5M were in service.
- 5 16:31 - 17:01Hrs, Omotosho/Ikeja-West 330kV line (cct M5W) CB tripped at Ikeja-West T/S on the following relay indications:
Siprotec relay: General trip, RPH trip, zone 1 trip.
Micom relay: General trip, RPH fault distance Z1 trip, SNTP failure, Active group 1, started phase A -N, start elements distance, O/C start 1>2 E/F start INI, distance trip Z1. NO load loss as ccts B6N and B5M were in service.
- 6 17:10 - 17:36Hrs, Osogbo/Ilesha/Ife 132kV line CB tripped at Osogbo T/S on shot circuit Red and Yellow phases, time delay O/C Red and Yellow phases, E/F. LHR = 45MW.
Note: Ife/Ondo 132kV line suspected having issue was isolated at Ife T/S for patrol before restoration of the line.
- 7 21:51 - 22:11Hrs, Aba/ltu 132kV line CB tripped at Aba T/S on O/C 3 phases. LHR = 52MW.

5 (c) PLANNED OUTAGES:-

- 1 02:02 - 19:17Hrs, Jebba 2G1 was shut down to carry out maintenance on the unit. Load loss = 87MW
- 2 09:42 - 15:50Hrs, Mando T/S 150MVA 330/132/33kV transformer T5 was taken out to carry out annual preventive maintenance on the transformer and its associated equipment. Load loss = 80MW
- 3 09:42 - 16:36Hrs, Mando/Zaria 132kV line was taken out to carry out annual preventive maintenance and relay calibration on the CB at Mando T/S. Load loss = 80MW
- 4 10:59 - 17:59Hrs, Katampe T/S 150MVA 330/132/33kV transformer T1 was taken out to carry out annual preventive maintenance on the transformer and its associated equipment. Load loss = 89MW

5(D) URGENT OUTAGES:-

- 1 00:32 through 24:00Hrs, Olorunsogo gas GT4 was shut down to carry out maintenance on the gas supply station. Load loss = 27.9MW
- 2 00:41 through 24:00Hrs, Olorunsogo gas GT7 was shut down to carry out maintenance on the gas supply station. Load loss = 28MW
- 3 00:51 through 24:00Hrs, Olorunsogo gas GT8 was shut down to carry out maintenance on the gas supply station. Load loss = 28.4MW
- 4 01:01 through 24:00Hrs, Olorunsogo gas GT6 was shut down to carry out maintenance on the gas supply station. Load loss = 15.5MW
- 5 01:10 through 24:00Hrs, Olorunsogo gas GT5 was shut down to carry out maintenance on the gas supply station. Load loss = 28MW
- 6 01:25 through 24:00Hrs, Olorunsogo gas GT2 was shut down to carry out maintenance on the gas supply station. Load loss = 28.1MW
- 7 10:07 - 12:39Hrs, Shiroro/Mando 330kV line 1 (cct R1M) was taken out to enable maintenance crew treat hotspot on Yellow phase isolator clamp at Mando T/S. No load loss as cct R2M was in service

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).

5 (E) EMERGENCY OUTAGES:- NIL.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:-

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts K4U, L7G, 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

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

6 WEATHER REPORT:- Rainfall reported at Shagamu, Alaoji, Ijebu-Ode, Osogbo, Onitsha.

7 INTERNATIONAL LINES:-

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

Maximum load - 294MW at 21:00Hrs.

Minimum load - 227MW at 01:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 106MW at 01:00Hrs.

Minimum load - 77MW at 07:00Hrs.

GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	28
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	7	1
330kV	19	11	8
132kV	102	92	10

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.
- 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.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 35MW at 20:00Hrs.
Minimum load - 20.8MW at 10:00Hrs.

8 MISCELLANEOUS:-

- 1 00:18Hrs, Delta GT20 was shut down due to low load demand by the Discos. Load loss = 86MW
- 2 06:37Hrs, Omotosho NIPP GT2 was tied. The unit was out due to low load demand by the Discos.
- 3 10:42Hrs, Egbin G/S reduced generation by 55MW due to low load demand by the Discos.
- 4 13:11Hrs, Azura-Edo IPP increased generation to maximum to improve the frequency.
- 5 14:00Hrs, Olorunsogo/Ayede 330kV line (cct R2A) was restored. The line was out on isolator fault at Ayede T/S.
- 6 18:33Hrs, Trans-Amadi GT2 was tied. The unit was out due to low gas pressure.
- 7 23:15Hrs, Shiroro G/S reduced generation by 100MW due to low load demand by the Discos.
- 8 23:18Hrs, Azura-Edo reduced generation by 75MW due to low load demand by the Discos.

**** 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.

12(D) UNAVAILABLE CAPACITOR BANK:

- 1 (i) Ogba T.S, (ii) Maiduguri T/S, (iii) Isolo T/S, (iv) Ado-Ekiti T/S, (v) Ilorin T/S, (vi) Akure T/S.

12(E) UNAVAILABLE SKYWIRES

LAGOS REGION

- 1 Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- 2 Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 3 330kV Ikeja West/Osogbo line. - 95 spans.
- 4 Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- 5 Ikeja West/Akangba 330kV line 2 - 1 span.
- 6 Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- 7 Akangba/Itire 132kV lines 1 & 2 - 1 span.
- 8 Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- 9 Ikeja West/Otta 132kV lines 1 & 2- 17 spans.

SHIRORO REGION

- 1 Jebba T/S 330kV Osogbo lines 1 & 2 and Ganmo line - 9 spans
- 2 Minna T/S 132kV Bida line - 32 spans
- 3 Shiroro T/S 330kV Jebba line 2 - 28 spans

ABUJA REGION

- 1 Apo T/S 132kV Keffi line - 36 spans

12 (F) UNAVAILABLE SYNCHROSCOPES :

- 1 Ikeja West, Onitsha, Egbin, Ugwuaji, Jos, Gwagwalada & Alaoji T/S.

FOR MORE INFORMATION: NCC Telephone Lines -

- a PAX 09/300, 309, 303 & 305.
- b NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
- c PLS - 622
- d GM (NCC) - 08036744641.
- e AGM (S/O) - 08056002757, CUG: 08129458475

