

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF MONDAY 10/09/2018

FOR: EVENTS OF SUNDAY 09/09/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,680	21:30	09/09/2018
GENERATION CAPABILITY	7644.7	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4867.3	-do-	-do-
PEAK GENERATION	4013.7	-do-	-do-
LOWEST GENERATION	2743.6	09:00	09/09/2018
8-HOURLY DURATION PEAK	3421.1	0100-0800	-do-
	3258.7	0900-1600	-do-
	4013.7	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	350	Omotosho, New Haven & Sakate T/S	08:00 each
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso, Gombe & Yola T/S	19:00, 20:00 & 21:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.98	03:51
LOWEST FREQUENCY	50.12	19:21

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 4th Sept, 2018		No. of days since last total collapse: 06												
Date of last partial collapse: 12 th April, 2018		No. of days since last partial collapse: 150												
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	--	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	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	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	0	3	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	--	--	--	9	
	Partial	0	0	0	1	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	313	279		
2 JEBBA	HYDRO	429	379		
3 SHIRORO	HYDRO	434	427		
4 EGBIN ST2 - 5	STEAM	261	221		
5 SAPELE	STEAM	50	50		
6 DELTA	GAS	205	182		
7 AFAM IV-V	GAS	0	0		
8 GEREGU GAS	GAS	143	73		
9 OMOTOSHO GAS	GAS	138.1	106		
10 OLORUNSOGO GAS	GAS	137.9	106.7		
11 GEREGU NIPP	GAS	0	0		
12 SAPELE NIPP	GAS	103.1	82.4		
13 ALAQJI NIPP	GAS	79.1	0		
14 OLORUNSOGO NIPP	GAS	107.2	0		
15 OMOTOSHO NIPP	GAS	110.7	0		
16 ODUKPANI NIPP	GAS	215.2	75.6		
17 IHOVBOR NIPP	GAS	102.1	78.1		
18 OKPAI	GAS	325	178		
19 AFAM VI	GAS	144	106		
20 IBOM POWER	GAS	0	0		
21 ASCO	GAS	0	0		
22 A.E.S	GAS	0	0		
23 OMOKU	GAS	55.1	41		
24 TRANS AMADI	GAS	0	0		
25 RIVERS IPP	(GAS)	160	105		
26 AZURA - EDO IPP	(GAS)	290	75		
27 EGBIN ST6	(GAS)	141	111		
28 PARAS ENERGY	(GAS)	70.2	67.8		
29 GBARAIN NIPP	GAS	0	0		
TOTAL		4013.7	2743.6		
1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	7138.00	297.42	7123.60	296.82
2 JEBBA	HYDRO	9004.00	375.17	8981.44	374.23
3 SHIRORO	HYDRO	10210.00	425.42	10172.81	423.87
4 EGBIN ST2 - 5	STEAM	5774.00	240.58	5485.00	228.54
5 SAPELE	STEAM	1103.00	45.96	1053.00	43.88
6 DELTA	GAS	8117.62	338.23	7916.60	329.86
7 AFAM IV-V	GAS	0.00	0.00	0.00	0.00
8 GEREGU GAS	GAS	2713.90	113.08	2694.37	112.27
9 OMOTOSHO GAS	GAS	2681.00	111.71	2659.80	110.83
10 OLORUNSOGO GAS	GAS	2640.60	110.03	2626.38	109.43
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	2324.52	96.86	2303.12	95.96
13 ALAQJI NIPP	GAS	1877.93	78.25	1855.98	77.33
14 OLORUNSOGO NIPP	GAS	1929.40	80.39	1881.60	78.40
15 OMOTOSHO NIPP	GAS	1762.00	73.42	1745.30	72.72
16 ODUKPANI NIPP	GAS	2533.66	105.57	2507.86	104.49
17 IHOVBOR NIPP	GAS	1990.00	82.92	1969.28	82.05
18 OKPAI	GAS	4955.00	206.46	4821.90	200.91
19 AFAM VI	GAS	2808.12	117.01	2722.69	113.45
20 IBOM	GAS	0.00	0.00	0.00	0.00
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	3286.50	136.94	3266.50	136.10
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1299.40	54.14	1268.75	52.86
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	2510.20	104.59	2489.30	103.72
27 EGBIN ST6	STEAM	2998.00	124.92	2843.80	118.49
28 PARAS ENERGY	GAS	1644.80	68.53	1640.90	68.37
29 GBARAIN NIPP	GAS	0.00	0.00	0.00	0.00
TOTAL		81,301.65	3,387.57	80,029.98	3,334.58

1.7A GENERATION POSITION AT 06:00HRS MONDAY 10/09/2018

	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 50.43Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	370	1G5, 6, 11 & 12 4	370	285	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	450	2G1 - 5 5	450	412	2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G3 & 4 2	300	300	411G3 & 4 2	300	291	411G1 - Out due to technical issues. 411G2 - Tripped on undisclosed fault.
	EGBIN STEAM	5	ST2 & 4 2	440	400	ST2 & 4 2	261	247	ST1 - Out due to refusal to send report of tripping on 04/09/2018. ST3 - Out on high vibration since 19th June 2017. ST5 - Shut down due to boiler pump trouble. ST4 - Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	ST2 1	120	50	0 0	0	0	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST2 - Out due to low load demand by the Discos. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.
	DELTA (GAS)	18	GT9 - 13, 15, 16 & 18 - 20 10	625	605	GT9 - 13 & 15 6	215	205	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT7 - Out on fault. GT16, 18, 19 & 20 - Out due to low load demand by the Discos. GT17 - Tripped on bearing vibration more than maximum.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Out due to technical issues. GT18 - Tripped on operating malfunction. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 1	145	100	GT11 - Generation reduced due to low load demand by the Discos. GT12 & 13 - Out due to gas constraint.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT2, 5 & 7 3	114	90.8	GT1, 3, 4, 6 & 8 - 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	336	304	GT2, 4 & 6 3	114	85.3	GT1, 5, 7 & 8 - Out due to low load demand by the Discos. GT3 - Out due to gas constraint. Generation reduced due to low load demand by the Discos.
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, 3 & 4 3	337.5	337.5	GT1 1	112.5	77.5	GT3 - Out due to low load demand by the Discos. GT4 - Out due to gas constraint.
	ALAOJI NIPP GAS	4	GT1 & 2 2	250	120	GT2 1	120	71.2	GT1 - Out due to low load demand by the Discos. GT2 - Generation reduced due to low load demand by the Discos. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	GT2 1	120	80.1	GT1 & 3 - Out due to low load demand by the Discos. GT2 - Generation reduced due to low load demand by the Discos. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT4 1	120	93.7	GT1 & 2 - Out due to low load demand by the Discos. GT3 - Out due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT4 & 5 2	250	230	GT5 1	115	82.9	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on high air inlet differential pressure. GT4 - Out due to low load demand by the Discos.
	IHOVBOR NIPP	4	GT1, 2 & 4 3	337.5	337.5	GT1 1	112.5	74.2	GT1 - On manual adjustment to frequency. GT2 & 4 - Out due to low load demand by the Discos. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Out due to Gbarain host community protest.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	370	GT11, 12 & ST18 3	370	183	GT11 - 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	GT13 1	153	125	GT11 & 12 - Out due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 1	150	116	GT12, 13 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	0 0	0	0	0 0	0	0	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Out on fault.
	AES	0	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 & 5 3	75	60	GT1, 2 & 5 3	50.8	50.8	GT3 - Tripped on over speed. GT4 - Awaiting major overhaul. GT6 Out on maintenance.
	TRANS-AMADI	4	GT1 & 2 2	50	40	0 0	0	0	GT1 & 2 - Out due to gas constraint. GT3 - Out on faulty. GT4 - Tripped on loss of excitation.
	RIVERS	1	GT1 1	160	160	GT1 1	160	93	GT1 - Generation reduced due to low load demand by the Discos.
	SUB TOTAL	131	78	7680.5	7096.5	41	3552.8	2763.5	Frequency = 50.43Hz.

1.7B GENERATION POSITION AT 06:00HRS OF MONDAY 10/09/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	ST6		220	111	ST6		111	111	Available unit on bar.
		1	1			1	1			
PARAS ENERGY	8	GT2 - 9		68.6	68.6	GT2 - 9		68.6	68.6	Available units on bar.
		8	8			8	8			
SUB TOTAL	9	9	9	288.6	179.6	9	179.6	179.6		
GRAND TOTAL	140	87	87	7969.1	7276.1	50	3,732.40	2,943.10		Frequency = 50.43Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 09/09/2018.							
EGBIN ST6 120MW 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		17		TRIPPED ON E/F
	PTCEXPRESS	ON	0100HRS		17		TRIPPED ON E/F
	SANKYO	ON	0100HRS		24		NIL
	FEEDER 8	10	1500HRS		24		NIL
IKORODU	PULK IT	ON	0100HRS		24		NIL
	INDUSTRIAL	1	0100HRS		21		TRIPPED ON E/F
	SPINTEX	11	0200HRS		24		NIL
	DANGOTE	ON	0100HRS		24		NIL
	LAND CRAFT	15	0200HRS		24		NIL
ALAUSA	TR4 15MVA	3.7	0100HRS		24		NIL
	TR5 -15MVA	3.7	1200HRS		24		NIL
	ALAUSA	8.3	0900HRS		24		NIL
M/LAND	PTC (MARYLAND)	14.5	1900HRS		9		TRIPPED ON O/C A,B,C&E/F
	TOTAL LOAD	67.2					

BILATERAL AGREEMENT LOAD DISPATCH							
60MW PARAS ENERGY GENERATION TO CEB OF SUNDAY 09/09/2018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	71	19:00	65.4	01:00	24	1643	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: SUNDAY 09/09/2018									
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	ON	ON	ON	ON	ON	24		SUPPLY NOT INTERRUPTED
KAM STEEL		15.0	0.4	01:00	0.2	04:00	24	8.3	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0.0	7.7	19:00	2.8	04:00	23	112.7	LOSS OF SUPPLY
XING 1	33kV feeder	0.0	18.9	06:00	0.6	09:00	24	127.2	SUPPLY NOT INTERRUPTED
XING 2		0.0	28.8	04:00	0.9	18:00	24	182.8	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15.0	4.4	03:00	1.6	04:00	24	51.0	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.1	01:00	0.4	12:00	24	30.9	SUPPLY NOT INTERRUPTED
LORDSMITH		0	0.1	01:00	0.1	16:00	24	2.40	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: MONDAY 10/09/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	138.61	104.60	381.84
TAIL WATER ELEVATION (METERS)	107	77.7	273.2
GROSS OPERATING HEAD (METERS)	31.61	26.90	108.64
AVERAGE TURBINE DISCHARGE (M3/SEC)	1060.00	1604.00	439.00
AVERAGE SPILLAGE (M3/SEC)	2724.00	3528.00	1386.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	3784.00	5132.00	1825.00
COMPUTED INFLOW (M3/SEC)	6742.00	5282.00	2191.00
STORAGE DIFFERENTIAL	2958.00	150	366.00
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 09/09/2018

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	514.6	22:00	489.68	338.7	05:00
EKO	361.0	21:00	568.39	225.3	09:00
IKEJA	510.9	22:00	638.74	297.7	13:00

2.0 GAS POSITION: MONDAY 10/09/2018

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	356	1100		372	728
DELTA (GAS)	248	915		215	700
OMOTOSHO GAS	101.5	336.8		114	222.8
OMOTOSHO NIPP	76.8	500		120	380
OLORUNSOGO (GAS)	84.4	336		114	222
OLORUNSOGO NIPP	80.4	750		120	630
SAPELE NIPP	81.4	500		112.5	387.5
SAPELE STEAM	50	720		720	
JAFAM IV-V	0	300		0	300
JAFAM VI	103	650		150	500
GEREGU GAS	90	435		145	290
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	177	480		370	110
ALAOJI NIPP	71.2	504		120	384
IHOVBOR NIPP	85.4	450		112.5	337.5
IBOM	0	198		0	198
ODUKPANI NIPP	0	625		115	510
TOTAL	1605.1	9234.80		2180	7054.8

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SUNDAY 09/09/18

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF MONDAY 10/09/2018 = 0MW. FREQUENCY 50.43Hz

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 Monday 10/09/2018 as at 0600Hrs was = 3544.6MW.

SNO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Geregu Gas GT12 & 13	290	0	290	1260.5
2	Alam VI GT12, 13 & ST10	490	0	490	
3	Geregu NIPP GT22 & 23	290	0	290	
4	Olorunsogo Gas GT3	38	0	38	
5	Sapele NIPP GT4	112.5	0	112.5	
6	Trans-Amadi GT1 & 2	40	0	40	
			0	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 1881.28MMSCF OF GAS (EQUIVALENT TO 7054.8MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
			0	0	0
			0	0	0
4.3 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Ihovbor GT2 & 4	225	0	225	2284.1
2	Azura Edo GT11 & 13	308	78	230	
3	Geregu Gas GT11	143	100	43	
4	Olorunsogo Gas GT1, 2, 4 & 8	266	85.3	180.7	
5	Delta GT16, 18, 19 & 20	380	0	380	
6	Alaoji NIPP GT1 & 2	240	71.2	168.8	
7	Rivers IPP GT1	160	93	67	
8	Olorunsogo NIPP GT1 - 3	360	80.1	279.9	
9	Omotosho Gas GT1 - 8	304	90.8	213.2	
10	Okpai GT11 & 12	150	20	130	
11	Omotosho NIPP GT1 & 4	240	0	240	
12	Sapele NIPP GT3	112.5	0	112.5	
13	Egbin ST4	151	137	14	
			0	0	
			0	0	
4.1 DUE TO WATER MANAGEMENT:					
Grand Total					3544.6

5.0 OUTAGES:

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

5(B) FORCED OUTAGES (TRANSMISSION):-

- 1 00:53 - 19:05Hrs, Kankia/Katsina 132kV line 1 CB tripped at Kankia T/S on O/C Red phase and E/F. LHR = 22MW
- 2 11:42 - 11:50Hrs, Benin/Egbin 330kV line (cct B6N) CBs tripped at both ends on the following relay indications:
At Benin T/S:
ABB relay: Trip-trip, trip-TRL123, PHS (STFWL3PE), ZM2-trip, EFC-CS, ZM2 & ZM3 - start, fault location = No data.
Auxiliary relay: K 86 (ABC).
At Egbin T/S:
Micom relay: Started phase B-N, trip phases (ABC) O/C start I, E/F, started INI, distance = 62.45km. No load loss as ccts B5M, M5W & V7B were in service.
- 3 14:05 through 24:00Hrs, Aba T/S 2 x 60MVA 132/33kV transformers T2A & T2B common primary CB tripped on O/C. LHR = 6.5MW & 7.5MW respectively.
- 4 14:06 - 14:29Hrs, Onitsha/Oji-River 132kV line 1 CB tripped at Oji River T/S on O/C Red phase and E/F. LHR = 12.0MW
- 5 15:06 - 15:28Hrs, Osogbo/Ikeja-West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:
At Osogbo T/S:
Siemens relay: Relay trip, Red phase zone 1 trip, E/F & O/C, PU time = 69ms, trip time = 5ms, distance = 156.5km
Ohmega relay: Zone 1 trip, phase A-earth, trip carrier receive 2, distance = 157.9km,
Auxiliary relay: 86A/2, 86T.
At Ikeja-West T/S:
Siprotec relay: General trip, Red phase fault, zone 1 trip, Zcom trip, 21 pickup AG, Pu time = 75ms, trip time = 1ms, distance = 97.8km.
Micom relay: General trip, Red phase fault, distance = 21 trip carrier sent, fault location = 98.53km, started phase A-N, trip phase A, E/F start INI. No load loss as ccts H2A, R2A & R1W were in service.
- 6 15:09 - 15:18Hrs, New Haven/Nkalagu 132kV line CB tripped at New Haven T/S on instantaneous O/C Red & Blue phases & lockout. LHR = 15.8MW
- 7 15:33 - 15:52Hrs, Sapele/Delta 330kV line (cct S4G) CBs tripped at both ends on the following relay indications:
At Sapele T/S:
SEL relay: Phase B –ground, zone 1 trip, location = 4.51km
At Delta T/S:
Siprotec relay: Distance pickup = L2E, pickup time = 174ms, trip time = 114ms, distance = 75.8km, relay trip Yellow phase zone 1 trip, E/F. No load loss as cct G3B was in service.
- 8 23:16 - 23:26Hrs, Ayede/lbadan North/lwo/lseyin 132kV line CB tripped at Ayede T/S on Siemens backup relay O/C Red & Blue phases. LHR = 45MW
- 9 23:20 - 23:50Hrs, Akangba T/S 150MVA 330/132/33kV transformer T4A secondary CB tripped on SBEF. LHR = 35MW
- 10 23:20 - 23:50Hrs, Akangba/Itire 132kV line CB tripped on voltage transformer supervision (VTS). LHR = 30MW

5 (C) PLANNED OUTAGES:-

- 1 07:05 - 19:18Hrs, Biu/Damba/Maiduguri 132kV line was taken out to allow LMD crew continue stringing of conductor at New Station in Molai. LHR = 17MW

5(D) URGENT OUTAGES:- NIL

5 (E) EMERGENCY OUTAGES:- NIL

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:-

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts A1K, K4U, U1A & A1S.

5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- NIL

5 (I) 330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- NIL.

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- cct J2H

5 (K) 330KV LINES THAT ARE ON SOAK:- ccts F1K, N4J & B3D.

6 WEATHER REPORT:- Rainfall was reported at Shiroro, Kano, Odukpani, Alaoji

7 INTERNATIONAL LINES:-

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

Maximum load - 261MW at 20:00Hrs.

Minimum load - 164MW at 11:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 100MW at 23:00Hrs.

Minimum load - 64MW at 03:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 36MW at 22:00Hrs.

Minimum load - 20MW at 09:00Hrs.

8 MISCELLANEOUS:-

- 1 00:35 through 24:00Hrs, Delta GT19 was shut down due to low load demand by the Discos. Load loss = 67MW

- 2 00:47 through 24:00Hrs, Olorunsogo Gas GT8 was shut down due to low load demand by the Discos. Load loss = 32MW
- 3 01:02Hrs, Jebba T/S 75MX 330kV Shunt Reactor 2R1 was switched on for voltage control. V/P =336/334kV
- 4 01:16 through 24:00Hrs, Delta GT20 was shut down due to low load demand by the Discos. Load loss = 60MW
- 5 01:25 - 17:40Hrs, Omoku P/S GT1 was shut down due to low load demand by the Discos. Load loss = 15MW
- 6 01:31 - 18:56Hrs, Azura-Edo IPP GT12 was shut down due to low load demand by the Discos. Load loss = 75MW
- 7 01:33 - 11:43Hrs, Alaoji NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 112.6MW
- 8 01:37 - 22:22Hrs, Sapele NIPP GT3 was shut down due to low load demand by the Discos. Load loss = 71.5MW
- 9 01:46 through 24:00Hrs, Delta GT18 was shut down due to low load demand by the Discos. Load loss = 50MW
- 10 03:58 through 24:00Hrs, Delta GT16 was shut down due to low load demand by the Discos. Load loss = 45MW
- 11 04:30 - 18:51Hrs, Azura-Edo IPP GT11 was shut down due to low load demand by the Discos. Load loss = 75MW
- 12 08:22 - 12:25Hrs, Olorunsogo NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 100.1MW
- 13 08:23 through 24:00Hrs, Alaoji NIPP GT1 was shut down due to low load demand by the Discos. Load loss = 80MW
- 14 08:32 through 24:00Hrs, Omotosho NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 69.5MW
- 15 12:43Hrs, Omotosho NIPP GT4 was tied. The unit was out due to low load demand by the Discos.
- 16 19:38Hrs, Odukpai NIPP GT4 was tied. The unit tripped on loss of heat vent (DLN) gas module.
- 17 19:55Hrs, Omotosho gas GT6 was tied. The unit was out due to low load demand by the Discos.
- 18 22:22Hrs, Sapele NIPP GT3 was tied to swap with GT1.
- 19 22:44 through 24:00Hrs, Sapele NIPP GT1 was shut down. No load loss as 100.5MW was transferred to GT3.
- 20 23:28 through 24:00Hrs, Odukpai NIPP GT4 was shut down due to low load demand by the Discos. Load loss = 85MW
- **** 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	28
OPTIC FIBRE	13	8
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	10	9
132kV	102	87	15

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 available reactor.

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 Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.

7 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.

SHIRORO REGION

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

PORT HARCOURT REGION

1 New Haven/Nkalagu 132kV line 2 ground switch - Canibalized Red phase female contact and canibalized Yellow phase male contact.

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 Benin, 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) - 08056002757, CUG: 08129458475

