

TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT WEDNESDAY 12/07/2017

FOR: EVENTS OF TUESDAY 11/07/2017

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	17,720	21:00	11/07/2017
GENERATION CAPABILITY	7427.5	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4916.4	-do-	-do-
PEAK GENERATION	4474.8	-do-	-do-
LOWEST GENERATION	3250.2	12:00	11/07/2017
8-HOURLY DURATION PEAK	3973.9	0000-0800	-do-
	3633	0900-1600	-do-
	4474.8	1700-2400	-do-
PEAK GENERATION TO DATE	5074.7	21:30	02/02/2016
MAXIMUM AVAILABLE CAPACITY TO DATE	7492.6	06:00	14/04/2014
MAXIMUM PEAK GENERATION CAPABILITY TO DATE	7099	07:00	13/04/2014
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	363	Omotosho T/S	04:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe & Kano T/S	01:00 & 10:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.59	11:08
LOWEST FREQUENCY	49.55	20:16

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 27th June, 2017		No. of days since last total collapse: 13											
Date of last partial collapse: 16 th March, 2017		No. of days since last partial collapse: 115											
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
2009	Total	1	--	--	--	5	5	4	1	--	--	1	19
	Partial	--	5	4	3	3	--	1	--	2	1	1	20
2010	Total	--	3	1	--	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	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	3	1			1			9
	Partial					1					2		4
2015	Total	1		1		2	1				1		6
	Partial	--	--	1		2				1			4
2016	Total	--	--	2	3	6	5		1	1	2	2	22
	Partial	--	--	1		1	3	1					6
2017	Total	5	3		3	1	1						13
	Partial	1		1									2

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	221	182
2 JEBBA	HYDRO	367	302
3 SHIRORO	HYDRO	394	230
4 EGBIN ST2 - 5	STEAM	323	284
5 SAPELE	STEAM	0	64
6 DELTA	GAS	512	366
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	288	145
9 OMOTOSHO GAS	GAS	136.8	98
10 OLORUNSOGO GAS	GAS	155.5	126
11 GEREGU NIPP	GAS	146	60
12 SAPELE NIPP	GAS	109.3	87
13 ALAQJI NIPP	GAS	80.2	79.1
14 OLORUNSOGO NIPP	GAS	221.7	98.7
15 OMOTOSHO NIPP	GAS	112.6	68.8
16 ODUKPANI NIPP	GAS	229	95.6
17 IHOVBOR NIPP	GAS	111.9	80
18 OKPAI	GAS	361	221
19 AFAM VI	GAS	150	111
20 IBOM POWER	GAS	80	86.5
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	71.6	89.3
24 TRANS AMADI	GAS	15.5	0
25 RIVERS IPP	(GAS)	0	0
26 EGBIN ST6	(GAS)	216	215
27 PARAS ENERGY	(GAS)	63	65.8
28 GBARAIN NIPP	GAS	109.7	95.4
TOTAL		4474.8	3250.2

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	4,454.00	185.58	4,437.90	184.91
2 JEBBA	HYDRO	7,873.00	328.04	7,847.80	326.99
3 SHIRORO	HYDRO	7,487.00	311.96	7,459.37	310.81
4 EGBIN ST2 - 5	STEAM	6,929.00	288.71	6,724.20	280.18
5 SAPELE	STEAM	841.80	35.08	802.10	33.42
6 DELTA	GAS	10,580.47	440.85	10,357.70	431.57
7 AFAM IV-V	GAS	-	0.00	-	0.00
8 GEREGU GAS	GAS	5,283.50	220.15	5,260.01	219.17
9 OMOTOSHO GAS	GAS	2,513.00	104.71	2,489.00	103.71
10 OLORUNSOGO GAS	GAS	3,139.80	130.83	3,112.45	129.69
11 GEREGU NIPP	GAS	2,507.13	104.46	2,494.51	103.94
12 SAPELE NIPP	GAS	2,192.01	91.33	2,177.54	90.73
13 ALAQJI NIPP	GAS	2,005.63	83.57	1,981.84	82.58
14 OLORUNSOGO NIPP	GAS	3,002.90	125.12	2,967.20	123.63
15 OMOTOSHO NIPP	GAS	2,537.40	105.73	2,527.20	105.30
16 ODUKPANI NIPP	GAS	3,805.69	158.57	3,773.99	157.25
17 IHOVBOR NIPP	GAS	2,042.19	85.09	2,019.55	84.15
18 OKPAI	GAS	6,654.00	277.25	6,495.10	270.63
19 AFAM VI	GAS	2,908.44	121.19	2,866.30	119.43
20 IBOM	GAS	1,668.96	69.54	1,659.00	69.13
21 ASCO	GAS	-	0.00	-	0.00
22 A.E.S	GAS	-	0.00	-	0.00
23 OMOKU	GAS	2,157.70	89.90	2,110.83	87.95
24 TRANS AMADI	GAS	245.40	10.23	240.40	10.02
25 RIVERS IPP	GAS	-	0.00	-	0.00
26 EGBIN ST6	STEAM	5,158.00	214.92	4,930.60	205.44
27 PARAS ENERGY	GAS	1,553.60	64.73	1,548.40	64.52
28 GBARAIN NIPP	GAS	2,351.00	97.96	2,331.30	97.14
TOTAL		89,891.62	3,745.48	88,614.29	3,692.26

GENERATION POSITION AT 06:00HRS OF WEDNESDAY 12/07/2017

	STATIONS	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)	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	1G6,11 & 12	320	320	1G6,11 & 12	320	184	1G5 - On planned outage. 1G7 - Out on stator winding failure. 1G8 - Out due to loss of supply to the auxiliary. 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.
		3			3			
	JEBBA HYDRO	2G2 - 5	386	380	2G2 - 5	376	376	2G1 - Out on maintenance. 2G6 - Out due to burnt generator winding and AVR.
		4			4			
	SHIRORO HYDRO	411G1 - 3	450	450	411G1 - 3	435	323	411G4 - Out on maintenance.
		3			3			
	EGBIN STEAM	ST2 & 5	440	440	ST2 & 5	301	246	ST1 - Tripped on generator CB trouble. ST3 - Tripped on high vibration. ST4 - Out of production since 17/11/2016. ST5 - Generation reduced due to un-availability of one circulating water pump.
		2			2			
	SAPELE (STEAM)	0	0	0	0	0	0	ST1 - Shut down due to generator breaker problem. ST2 - Shut down due to poor cooling water. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
		0			0			
DELTA (GAS)	GT4, 7, 8, 10 - 13, 15, 16, 18 & 19	595	555	GT4, 7, 10 - 13, 15, 16, 18 & 19	535	501	GT3 & 5 - Out due to generator winding fault. GT6 - Out on maintenance. GT8 - Out for frequency management. GT9 - Out due to sparking within the crushing jaws. GT14 - Out on major overhaul. GT17 - Out on excitation trouble. GT20 - Out on major inspection.	
	11			10				
AFAM IV & V (GAS)	0	0	0	0	0	0	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 & 18 - Out due to burnt generator transformer. GT19 & 20 - Awaiting major overhaul.	
	0			0				
GEREGU GAS	GT11 - 13	435	435	GT12 & 13	270	270	GT11 - Out for frequency management.	
OMOTOSHO GAS	GT1 - 8	336	304	GT2, 5, 6 & 7	152	142.2	GT3 & 4 - Out for frequency management. GT1 & 8 - Out due to gas constraints.	
OLORUNSOGO GAS	GT1 - 8	336	304	GT1, 2, 6, 7 & 8	190	176.4	GT3 & 4 - Out for frequency management. GT5 - Out due to gas constraints.	
	8			5				
GEREGU NIPP	GT21 - 23	435	435	GT23	145	109	GT21 & 22 - Out due to gas constraints.	
	3			1				
SAPELE NIPP	GT2	112.5	112.5	GT2	112.5	86.6	GT1 - Out on undisclosed fault. GT3 - Out on bearing lift pump trouble. GT4 - Tripped on loss of auxiliary.	
	1			1				
ALAOJI NIPP GAS	GT1, 2 & 4	375	360	GT1	120	74	GT1 - Generation reduced due to frequency management. GT2 & 4 - Out due to gas constraints. GT3 - Shut down due to generator air inlet filter trouble.	
	3			1				
OLORUNSOGO NIPP GAS	GT1 - 3	375	360	GT1 & 3	240	232.3	GT2 - Out for frequency management. GT4 & ST2 - Out of production since 25/10/2016.	
	3			2				
OMOTOSHO NIPP GAS	GT1, 2 & 4	375	360	GT1 & 2	240	134	GT1 & 2 - On frequency response. GT3 - Out of production since 02/08/2016. GT4 - Out due to gas constraints.	
	3			2				
ODUKPANI NIPP	GT1 - 3 & 5	500	480	GT1 & 5	240	234.4	GT2 & 3 - Out for frequency management. GT4 - Out on unit transformer problem.	
	4			2				
IHOVBOR NIPP	GT1 - 3	337.5	337.5	GT2	112.5	75	GT1 & 3 - Shut down for frequency management. GT2 - Generation reduced due to frequency management. GT4 - On maintenance.	
	3			1				
GBARAIN NIPP GAS	GT2	112.5	112.5	0	0	0	GT2 - Out on frequency management.	
	0			0				
OKPAI GAS/STEAM	GT12 & ST18	300	300	GT12 & ST18	215	177	GT11 - Tripped on auxiliary transformer disturbance alarm. Generation limited to 215MW due to unavailability of one boiler.	
	2			2				
AFAM VI GAS/STEAM	GT11- 13 & ST10	650	650	GT13	150	126	GT11, 12 & ST10 - Out for frequency management.	
	4			1				
IBOM POWER GAS	GT2 & 3	150	150	GT3	115	67.7	GT2 - Out due to line constraints.	
	2			1				
AES	0	0	0	0	0	0	Out of production since 27/09/2014.	
	0			0				
ASCO	0	0	0	0	0	0	GT1 - Shut down due to leakage in the furnace.	
	0			0				
OMOKU GAS	GT2, 3, 5 & 6	100	80.5	GT2, 3, 5 & 6	80.5	80.5	GT1 - Tripped due to vapour oil separator motor trip. GT4 - Out for overhaul.	
	4			4				
TRANS-AMADI	GT4	25	20	GT4	19.5	19.5	Available unit on bar.	
	1			1				
RIVERS	0	0	0	0	0	0	Out of production since 16/09/2016.	
	0			0				
	SUB TOTAL	76	7145.5	6946	52	4369	3634.6	Frequency = 50.24Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 12/07/2017 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK
EGBIN	ST6	220	220	1	Available unit on bar.
	1				
PARAS ENERGY	GT2 - 9	72	72	7	GT2 - On standby.
	8				
SUB TOTAL		292	292	8	
GRAND TOTAL		7437.5	7238	60	4,649.80 3,915.40 Frequency = 50.24Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 11/07/2017

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	ON	1:00	23	PLANNED OUTAGE
	PTCEXPRESS	10	8:00	17	PLANNED OUTAGE
	SANKYO	ON	1:00	24	NIL
	FEEDER 8	12	8:00	24	NIL
IKORODU	PULK IT	3	8:00	24	NIL
	INDUSTRIAL	16	8:00	24	NIL
	SPINTEX	7	13:00	24	NIL
	DANGOTE	3	18:00	24	NIL
	LAND CRAFT	6	7:00	24	NIL
ALAUUSA	TR4 -15MVA	6	17:00	17	NIL
	TR5 -15MVA	4.6	10:00	24	NIL
	ALAUUSA	14.7	13:00	24	NIL
MLAND	PTC (MARYLAND)	14	12:00	24	NIL
TOTAL LOAD		96.3			
GRAND TOTAL		234.3			

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
SAKATE/IKEJA WEST 330KV LINE	66.7	07:00	24	NIL

1.8 HYDROLOGICAL DATA: WEDNESDAY 12/07/2017

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	133.91	102.74	364.36
TAIL WATER ELEVATION (METERS)	104.68	74.00	271.00
GROSS OPERATING HEAD (METERS)	29.23	28.74	93.36
AVERAGE TURBINE DISCHARGE (M3/SEC)	663	1260	377
AVERAGE SPILLAGE (M3/SEC)	0	0	0
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	663	1260	377
COMPUTED INFLOW (M3/SEC)	1068	1191	481
STORAGE DIFFERENTIAL	405	-69	104
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT TUESDAY 11/07/2017

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	468	20:00	592.87	328	16:00
EKO	376.1	09:00	571.44	190.8	12:00
IKEJA	546.1	21:00	622.87	401.2	04:00

2.0 GAS POSITION: WEDNESDAY 12/07/2017

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	NGC DECLARED QUANTITY (MMS317.578CF/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	281		1100		301	799
DELTA (GAS)	317		765		535	230
OMOTOSHO GAS	102.4		336.8		152	184.8
OMOTOSHO NIPP	77.6		500		240	260
OLORUNSOGO (GAS)	100		336		190	146
OLORUNSOGO NIPP	106.7		750		240	510
SAPELE NIPP	92.1		500		112.5	387.5
SAPELE STEAM	64		720		0	720
AFAM IV-V	0		300		0	300
AFAM VI	114		650		150	500
GEREGU GAS	196		435		270	165
GEREGU NIPP	143		435		145	290
OKPAI (GAS/STEAM)	172		480		215	265
ALAOJI NIPP	114.1		504		120	384
IHOVBOR NIPP	90.8		450		112.5	337.5
IBOM	80.6		198		115	83
ODUKPANI NIPP	173.5		625		240	385
TOTAL	2224.8		9085.675		3138	5946.8

1 MMSCF IS EQUIVALENT TO 3.75MW

SYSTEM BLACK START CAPABILITY

Delta, Shiroro & Egbin - Available.

SPINNING RESERVE FOR : TUESDAY 11/07/2017

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

3.0 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 12/07/2017 = 0MW. FREQUENCY 50.24Hz.

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	
3	Delta	GT16	40	0	0
		GT17	40	0	
4	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
5	Geregu NIPP	GT22	35	0	0
6	Omotosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
TOTAL (MW)			295	0	0

4.0 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Wednesday 12/07/2017 as at 0600hrs was = 2359.5MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNUTILIZED GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Geregu NIPP GT21 & 22	290	0	290	764
2	Omotosho Gas GT1 & 8	76	0	76	
3	Alaoji NIPP GT2 & 4	240	0	240	
4	Omotosho NIPP GT4	120	0	120	
5	Olorunsogo Gas GT5	38	0	38	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1585.81MMSCF OF GAS (EQUIVALENT TO 5946.8MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom GT2	35	0	35	35
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Afam VI GT11, 12 & ST10	500	0	500	1560.5
2	Delta GT8	20	0	20	
3	Ihovbor GT1 & 3	225	0	225	
4	Odukpani GT2 & 3	240	0	240	
5	Olorunsogo NIPP GT2	120	0	120	
6	Omotosho Gas GT3 & 4	76	0	76	
7	Geregu Gas GT11	145	0	145	
8	Gbarain GT2	112.5	0	112.5	
9	Olorunsogo Gas GT2 & 4	76	0	76	
10	Alaoji NIPP GT1	120	74	46	
4.4 DUE TO WATER MANAGEMENT					
				0	
Total					2359.5

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):-

- 09:25 - 17:25Hrs, Trans Amadi GT4 tripped on generator differential protection fault. LHR = 20MW.
- 07:48 - 17:08Hrs, Odukpani P/S GT1 de-loaded auto due to false detector sensor bearing temperature high alarm. LHR = 111.6MW.

5 (B) FORCED OUTAGES TRANSMISSION:-

- 02:24 - 02:32Hrs, Osogbo/Offa/Omuaran 132kV line CB tripped at Osogbo T/S on Nari relay- O/C Yellow and Blue Phases. LHR = 20MW.
- 11:00 - 11:15Hrs, Benin/Egbin 330kV line (cct B6N) CB tripped at Benin T/S only as follows:-
ABB relay – Trip –trip, Trip – TRL3, PHS-STFW, L3PE, ZM1 –trip, EFC –CS, DEF –block, ZM2 & 3 start, ZMCIP –CSL3, fault locator –N/A. MVAJ K86 C flagged
Omega relay – Zone 1 Phase C – ground AR operated at Egbin. No load loss as ccts H7V, V7B, B5M & H1W were in service.
- 11:01 - 11:24Hrs, Egbin/Ikeja West 330kV line (cct N6W) CB tripped at Ikeja West T/S only on :P40 Agile relay- General trip, O/C Red, Yellow & Blue Phases, DEF trip, trip –Phase ABC, E/F, start IN, E/F trip, fault IN zone – non.
- 13:51 – 14:23Hrs, Benin/Egbin 330kV line (cct B6N) CBs tripped at both ends as follows:-
At Benin T/S: ABB relay – Trip – trip, trip – TRL1 -3, PHS –STFW L3PE, EFC –CS, TEF – trip, fuse VTSE, fault location = N/A. MVAJ K86C flagged. Voltage profile = 342/342kV.
At Egbin T/S: Micom relay – start B, trip Z3,4 & P, started Phase B- N trip Phases ABC started element, distance = N/A. No load loss as ccts H7V, V7B, B5M & H1W were in service.
- 13:52 – 14:05Hrs, Egbin/Ikeja West 330kV line (cct N6W) CB tripped at Ikeja West T/S only on P40 Agile relay –general trip, O/C Red, Yellow & Blue Phases, DEF trip, tripping Phases ABC E/F, start IN > 1 , E/F trip IN>1, location = N/A. No load loss as ccts H1W, H2A, R2A & R1W were in service.
- 14:43 – 14:58Hrs, Gombe/Biu/Maiduguri 132kV line CB tripped at Gombe T/S on O/C trip Red & Yellow Phases, pick up. Load loss = 42MW. Weather – fine.
- 20:56 through 24:00Hrs, Egbin/Ikeja West 330kV line (cct N6W) CB tripped only at Ikeja West T/S on Egbin line TC -1/2, TC relay unhealthy and low SF6 gas. No load loss as ccts N7K, N8K, K7W & K8W were in service.

5 (C) PLANNED OUTAGES:

- 09:40 - 17:49Hrs, Calabar T/S 60MVA 132/33kV transformer T2 was taken out of service for annual preventive maintenance on the transformer and its associated equipment. LHR = 8.5MW.
- 11:39 - 18:01Hrs, Jebba P/S/Jebba T/S 330kV line 1 (cct B8J) was taken out of service for annual preventive maintenance on the line breaker and its associated equipment. No load interruption as cct B9J was in service.
- 11:56 through 24:00 Hrs, Akangba T/S 150MVA 330/132/13.8kV transformer 5T4A was taken out of service for MBH contractor to disconnect conductors on the 330kV main bus to replace faulty isolators and grounding switches with new ones. No load loss as the load was diverted to Egbin, Aja & Ikeja West T/S.
- 11:56 through 24:00Hrs, Akangba T/S 90MVA 330/132/13.8kV transformer 5T2A was taken out of service for MBH contractor to disconnect conductors on the 330kV main bus to replace faulty isolators and grounding switches with new ones. No load loss as the load was diverted to Egbin, Aja & Ikeja West T/S.

5(D) URGENT OUTAGES:

- 07:11 - 16:22Hrs, Shiroro 411G3 was shut down due to its governor oil pump that was running continuously. LHR = 105MW.
- 09:21 - 11:39Hrs, Jos/Bauchi 132kV line was released to LMD crew to replace broken insulator on tower #63. No load loss as the circuit is out on fault.
- 11:22 – 13:06Hrs, Otta/Papalanto 132kV line was taken out of service for the replacement of weak Blue Phase conductor at Papalanto terminal. LHR = 17.2MW.
- 12:31 – 17:30Hrs, Benin 330kV reserve bus was taken out of service to enable maintenance crew mend snapped Red Phase conductor on the reserve bus . No load loss as 40MW was transferred to the main bus via the bus coupler.
- 14:56 through 24:00Hrs, Sapele ST2 was shut down due to poor cooling water.
- 19:48 through 24:00Hrs, Delta P/S GT11 was shut down due to sparking within the crushing jaws.

5 (E) EMERGENCY OUTAGES:-

The under mentioned lines were opened on frequency control:-

- 19:15 - 19:32Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line CB. LHR = 55MW. Frequency was 49.85Hz.
- 19:46 - 19:54Hrs & 20:16 - 2:32Hrs, Osogbo/Akure/Ado Ekiti 132kV line CB. LHR = 46MW & 45MW respectively. Frequency was 49.55Hz & 49.76Hz respectively
- 21:35 - 21:53Hrs, Osogbo/Offa/Omuaran 132kV line CB . LHR = 20MW. Frequency was 49.73Hz.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION: NIL

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts J2L & U2A.

5 (I) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- ccts K1J, A2K & N4J.

5 (J) 330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- cct W4L.

5 (K) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts L7G & N6W.

9 WEATHER REPORT: No Rainfall reported at any station.

10 INTERNATIONAL LINES:-

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

Maximum load - 229MW at 22:00Hrs.

Minimum load - 128MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 77MW at 03:00Hrs.

Minimum load - 62MW at 19:00Hrs.

C KATSINA/GAZAQUA/MARADI 132KV LINE

Maximum load - 37.0MW at 20:00Hrs.

Minimum load - 28.0MW at 05:00Hrs.

11 MISCELLANEOUS:-

7 21:47 through 24:00Hrs, Omoku P/S GT1 was shut down due to vapour oil separator motor trip. LHR = 16MW.

6 GENERATOR MERIT ORDER BASED ON SYSTEM RESPONSE AND GRID RELIABILITY

GROUP 1 - ALL UNITS OFFERING FREE GOVERNOR FREQUENCY RESPONSE.

GROUP 2 - ALL UNITS OFFERING REGULATING RESERVE.

GROUP 3 - ALL UNITS OFFERING SPINNING RESERVE.

GROUP 4 - HYDRO IN HIGH FLOOD PERIOD SEASON, KAINJI, JEBBA AND SHIRORO.

GROUP 5 - ALL UNITS USED TO AVOID OVERLOADING TRANSMISSION LIMITS.

GROUP 6 - ALL UNITS OFFERING VOLTAGE SUPPORT OUTSIDE NORMAL LEVEL.

GROUP 7 - ALL UNITS IN LOCATION TO DIMINISH LOSSES

GROUP 8 - ALL UNITS NOT OFFERING ANY SERVICES.

8 (A) COMMUNICATION MEDIA

STATIONS	NO. INSTALLED	NO. WORKING
PLC/PAX	37	33
OPTIC FIBRE	13	11
PLS	14	6

8 (B) SCADA RTU STATUS

STATIONS	TOTAL NO OF STATIONS	NO OF RTU INSTALLED	NO OF RTU WORKING
POWER STATIONS	23	8	2
330kV	41	17	13
132kV	119	103	19

12.0 UNAVAILABLE EQUIPMENTS

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

1 Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.

KADUNA REGION:

1 Kumbotso 150MVA 330/132/33kV transformer T1A - Burnt control cables.

ENUGU REGION:

1 Onitsha T/S 90MVA 330/132/13.8kV transformer 9T2 - Out due to differential fault.

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.

- 1 07:24Hrs, Benin T/S 330kV 75MX Raector 6R2 was placed in service on voltage control. V/P = 339/337kV.
- 2 10:05Hrs, Aja T/S Newly installed 60MVA 132/33kV transformer T1 was restored on soak after installation work.
- 3 11:18 - 19:47Hrs, Delta P/S GT9 was shut down for frequency management. LHR = 15MW.
- 4 11:19 - 17:06Hrs, Delta P/S GT11 was shut down for frequency management. LHR = 15MW.
- 5 12:09Hrs, Mayo Belwa T/S Newly installed 40MVA 132/33kV transformer was energized.
- 6 12:18Hrs, Ibom Power was instructed to reduce generation to remove GT3 from frequency response and reduced generation by 30MW. Frequency
- 7 12:23Hrs, Alaoji NIPP GT1 was tied to the grid to swap with GT4.
- 8 12:31Hrs, Alaoji NIPP GT4 was shut down and load of 80MW was transferred to GT1
- 9 19:14Hrs, Olorunsogo NIPP GT3 was tied. The unit has been out on fault.
- 10 19:20Hrs, 330kV cct M5W was restored okay. The line has been out on planned outage.
- 11 20:35Hrs, Omotosho P/S GT5 was tied. The unit has been out on frequency management
- 12 20:38Hrs, Olorunsogo Gas GT1 was tied. The unit has been out on frequency management.

12(D) LAGOS REGION

- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S.
- 2 132kV Akangba/ltire line 1- Faulty line isolator at Akangba T/S.
- 3 Agbara/Ojo line 1 on soak.

SHIRORO REGION

- 1 Lokoja/Gwagwalada 330kV line 2 - Cut sky wire between towers 339 & 340.

12(E) UNAVAILABLE CAPACITOR BANK:

- (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 (F) LINES WITH MISSING SKY WIRE

LAGOS REGION

- 1 Omotosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21

- 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.

OSOGBO REGION:

- 1 Omotosho 330kV T/S, 2nd series 330kV CB #3322 out due to control circuit problem.
- 2 Jebba/Osogbo 330kV line 1 (cct J1H) - Defective line isolator mechanism at Osogbo T/S

ENUGU REGION:

- 1 New Haven/YendeV 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/YendeV 132kV By pass isolator - Canibalized to repair the line isolator.

SHIRORO REGION

- 1 Kainji/Jebba 330kV line 1 - CB problem at Kainji T/S.
- 2 Jebba T/S 75MX reactor 2R2 CB - exploded.

PORT HARCOURT REGION

- 1 Alaoji/kot-Ekpene 330KV line 2 (cct A2K) Yellow Phase isolator not latching properly.

12 (C) UNAVAILABLE/DEFECTIVE GROUND SWITCHES

Benin Region

- 1 Irrua T/S: Benin/Irrua 132kV line Earth Switch - faulty.

ENUGU REGION:

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

- 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 Apo T/S 132kV Keffi line - 36 spans
- 4 Shiroro T/S 330kV Jebba line 2 - 28 spans

12 (G) UNAVAILABLE SYNCHROSCOPES :

- 1 Benin, Ikeja West, Onitsha, Egbin, Ugwuaji, Osogbo, Kaduna, 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) - 08066067487, CUG: 09021765320
- f Coordinator (S/O) - 08037868916, 08054353904, 08028332125, CUG Airtel 08129458481.
- g SYSTEM OPERATIONS WEB SITE: www.nigeriasystemoperator.org