

TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT WEDNESDAY 09/08/2017

FOR: EVENTS OF TUESDAY 08/08/2017

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	08/08/2017
GENERATION CAPABILITY	7332	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	4814.8	-do-	-do-
PEAK GENERATION	4259.4	-do-	-do-
LOWEST GENERATION	2901	04:00	08/08/2017
	3364.2	0000-0800	-do-
	3533.9	0900-1600	-do-
	4243.6	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	364	Omotosho T/S	07:00
LOWEST VOLTAGE FOR THE DAY	300	Gombe T/S	06:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.56	11:53
LOWEST FREQUENCY	49.47	19:13

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 27th June, 2017		No. of days since last total collapse: 40												
Date of last partial collapse: 19 th July, 2017		No. of days since last partial collapse: 20												
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	--	--	--	2	5	5	4	1	--	--	1	19
	Partial	--	5	4	3	3	--	--	1	--	2	1	1	20
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	3	1			1				9
	Partial													2
2015	Total	1		1		2					2	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			1							3

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)
1 KAINJI	HYDRO	337	189
2 JEBBA	HYDRO	387	240
3 SHIRORO	HYDRO	551	350
4 EGBIN ST2 - 5	STEAM	433	320
5 SAPELE	STEAM	60	59
6 DELTA	GAS	485	311
7 AFAM IV-V	GAS	0	0
8 GEREGU GAS	GAS	281	120
9 OMOTOSHO GAS	GAS	76.1	76.7
10 OLORUNSOGO GAS	GAS	185.1	104.8
11 GEREGU NIPP	GAS	137	100
12 SAPELE NIPP	GAS	92.2	81.3
13 ALAOJI NIPP	GAS	60	40.1
14 OLORUNSOGO NIPP	GAS	112	85.5
15 OMOTOSHO NIPP	GAS	100.9	92
16 ODUKPAI NIPP	GAS	116.5	111.6
17 IHOVBOR NIPP	GAS	97.9	0
18 OKPAI	GAS	190	190
19 AFAM VI	GAS	121	124
20 IBOM POWER	GAS	0	0
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	77.1	76.6
24 TRANS AMADI	GAS	15.8	0
25 RIVERS IPP	(GAS)	0	0
26 EGBIN ST6	(GAS)	166	160
27 PARAS ENERGY	(GAS)	67.7	69.4
28 GBARAIN NIPP	GAS	110.1	0
TOTAL		4259.4	2901

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	6,897.00	287.38	6,879.90	286.66
2 JEBBA	HYDRO	8,037.00	334.88	8,013.32	333.89
3 SHIRORO	HYDRO	11,755.00	489.79	11,726.07	488.59
4 EGBIN ST2 - 5	STEAM	8,938.00	372.42	8,426.70	351.11
5 SAPELE	STEAM	1,317.30	54.89	1,314.80	54.78
6 DELTA	GAS	9,338.26	389.09	9,105.00	379.38
7 AFAM IV-V	GAS	-	0.00	-	0.00
8 GEREGU GAS	GAS	3,721.20	155.05	3,697.22	154.05
9 OMOTOSHO GAS	GAS	1,933.00	80.54	1,911.50	79.65
10 OLORUNSOGO GAS	GAS	2,953.26	123.05	2,925.29	121.89
11 GEREGU NIPP	GAS	2,775.25	115.64	2,762.32	115.10
12 SAPELE NIPP	GAS	2,185.10	91.05	2,172.70	90.53
13 ALAOJI NIPP	GAS	1,028.31	42.85	1,015.81	42.33
14 OLORUNSOGO NIPP	GAS	2,292.50	95.52	2,260.70	94.20
15 OMOTOSHO NIPP	GAS	2,188.10	91.17	2,178.30	90.76
16 ODUKPAI NIPP	GAS	1,769.21	73.72	1,747.81	72.83
17 IHOVBOR NIPP	GAS	1,300.00	54.17	1,284.16	53.51
18 OKPAI	GAS	4,555.00	189.79	4,400.20	183.34
19 AFAM VI	GAS	2,379.61	99.15	2,341.79	97.57
20 IBOM	GAS	-	0.00	-	0.00
21 ASCO	GAS	-	0.00	-	0.00
22 A.E.S	GAS	-	0.00	-	0.00
23 OMOKU	GAS	1,597.90	66.58	1,565.82	65.24
24 TRANS AMADI	GAS	108.50	4.52	106.20	4.43
25 RIVERS IPP	GAS	-	0.00	-	0.00
26 EGBIN ST6	STEAM	3,890.00	162.08	3,693.30	153.89
27 PARAS ENERGY	GAS	1,657.90	69.08	1,648.10	68.67
28 GBARAIN NIPP	GAS	454.00	18.92	444.00	18.50
TOTAL		83,071.40	3,461.31	81,621.01	3,400.88

GENERATION POSITION AT 06:00HRS OF WEDNESDAY 09/08/2017

	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	1G5, 6, 11 & 12	440	440	1G5, 6, 11 & 12	440	318	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.
		4			4			
	JEBBA HYDRO	2G2 - 5	386	380	2G3 - 5	258	258	2G1 - Out on maintenance. 2G2 - Out for frequency management. 2G6 - Out due to burnt generator winding and AVR.
		4			3			
	SHIRORO HYDRO	411G1 - 4	600	600	411G1 - 4	500	310	411G1 - 3 - Load reduced due to high frequency.
		4			4			
	EGBIN STEAM	ST2, 4 & 5	660	660	ST2 & 4	440	308	ST1 - Tripped on generator CB trouble. ST3 - Tripped on high vibration. ST5 - Out for frequency management.
		3			2			
	SAPELE (STEAM)	ST2	120	60	ST 2	60	60	ST1 - Tripped on low drum level. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	GT4, 7, 10 - 13, 15, 16, 18 & 19	565	535	GT4, 7, 10 - 13, 15, 16, 18 & 19	535	500	GT3 & 5 - Out due to generator winding fault. GT6 & 8 - Out on maintenance. GT9 - Tripped on excitation system major trouble. GT14 - Out on major overhaul. GT17 - Out on excitation trouble. GT20 - Out on major inspection.
10		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	290	290	GT11 & 13	290	160	GT12 - Out on maintenance.	
	2			2				
OMOTOSHO GAS	GT1 - 8	336	304	GT1, 5 & 7	114	76.8	GT2, 3, 4, 6 & 8 - Out for frequency management.	
	8			3				
OLORUNSOGO GAS	GT1 - 8	336	304	GT1, 2, 4, 6, 7, & 8	228	157.4	GT3 & 5 - Out for frequency management.	
	8			6				
GEREGU NIPP	GT21 & 22	290	290	GT22	145	80	GT21 - Out due to gas constraints. GT23 - Tripped on ventilation system trip.	
	2			1				
SAPELE NIPP	GT4	112.5	112.5	GT4	112.5	80.9	GT1 - Out on undisclosed fault. GT2 - Out due to auxiliary oil pump problem. GT3 - Out on bearing lift pump trouble.	
	1			1				
ALAOJI NIPP GAS	GT1, 2 & 4	375	360	GT2	120	41.5	GT1 & 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	GT2	120	90.3	GT1 & 3 - Out for frequency management. GT4 & ST2 - Out of production since 25/10/2016.	
	3			1				
OMOTOSHO NIPP GAS	GT1, 2 & 4	375	360	GT1	120	80	GT2 - Out for frequency management. GT3 - Out of production since 02/08/2016. GT4 - Out due to gas constraints.	
	3			1				
ODUKPANI NIPP	GT1, 3 & 5	375	360	GT1	110.7	110.7	GT2 - Tripped on busbar 1 under voltage. GT3 - Out on frequency management. GT3 & 5 - Out for frequency management. GT4 - Out on unit transformer problem.	
	3			1				
IHOVBOR NIPP	GT1 - 3	337.5	337.5	0	0	0	GT1 & 2 - Out for frequency management. GT3 - Out due to tripping of ccts H7V & V7B.	
	3			0				
GBARAIN NIPP GAS	GT2	112.5	112.5	GT2	112.5	84	Available unit on bar.	
	1			1				
OKPAI GAS/STEAM	GT11, 12 & ST18	450	305	GT11, 12 & ST18	305	190	Generation limited to 305MW due to high system frequency	
	3			3				
AFAM VI GAS/STEAM	GT11, 13 & ST10	433.3	433.3	GT11	150	124	GT12 - Shut down due to power oil pump system fault. GT13 & ST10 - Out for frequency management.	
	3			1				
IBOM POWER GAS	0	0	0	0	0	0	GT2 - Out due to the fire outbreak on the control panel. GT3 - Out on maintenance work. Generation reduced due to highair inlet differential pressure.	
	0			0				
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	GT1, 2, 5 & 6	100	81.2	GT1, 2, 5 & 6	81.2	81.2	GT3 - Tripped on generator differential lockout. GT4 - Out for overhaul.	
	4			4				
TRANS-AMADI	GT4	25	20	GT4	16.2	16.2	Available unit on bar.	
	1			1				
RIVERS	0	0	0	0	0	0	Out of production since 16/09/2016.	
	0			0				
	SUB TOTAL	74	7093.8	6705	51	4258.1	3127	Frequency = 50.11Hz.

1.7B GENERATION POSITION AT 06:00HRS OF WEDNESDAY 09/08/2017 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	ST6	220	220	ST6	170	170	Available unit on bar.
	1			1			
PARAS ENERGY	GT2 - 4 & 6 - 9	63.5	63.5	GT2 - 4 & 6 - 9	63.5	63.5	GT5 - Out on maintenance.
	7			7			
SUB TOTAL	8	288.8	288.8	8	233.5	233.5	
GRAND TOTAL	82	7382.6	6993.8	59	4,491.60	3,360.50	Frequency = 50.11Hz.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - TUESDAY 08/08/2017

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	on	0100hrs	24	NIL
	PTCEXPRESS	9	0800hrs	24	NIL
	SANKYO	on	0100hrs	24	NIL
	FEEDER 8	11	1700hrs	24	NIL
IKORODU	PULK IT	on	0100hrs	24	NIL
	INDUSTRIAL	19	2000hrs	24	NIL
	SPINTEX	4	1100hrs	24	NIL
	DANGOTE	3	0600hrs	24	NIL
ALAUUSA	LAND CRAFT	on	0100hrs	24	NIL
	TR4 15MVA	4.6	1000hrs	24	NIL
	TR5 -15MVA	4.6	0800hrs	24	NIL
MLAND	ALAUUSA	14	1400hrs	24	NIL
	PTC (MARYLAND)	16	1200hrs	20	Planned outage
TOTAL LOAD	85.2				

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
IKEJA WEST/SAKATE 330KV LINE	71.8	11:00	24	NIL

1.8 HYDROLOGICAL DATA: WEDNESDAY 09/08/2017

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	136.95	103.08	367.44
TAIL WATER ELEVATION (METERS)	104.8	74.10	271.5
GROSS OPERATING HEAD (METERS)	32.15	28.98	95.94
AVERAGE TURBINE DISCHARGE (M3/SEC)	1010	1286	575
AVERAGE SPILLAGE (M3/SEC)	0	284	0
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1010	1570	575
COMPUTED INFLOW (M3/SEC)	1913	1709	649
STORAGE DIFFERENTIAL	903	139	74
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 08/08/2017

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	398.1	12:00	406.85	315.6	07:00
EKO	394.9	15:00	460.46	285.1	18:00
IKEJA	492.0	08:00	701.54	386.9	04:00

2.0 GAS POSITION: WEDNESDAY 09/08/2017

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	308		1100		440	660
DELTA (GAS)	500		765		535	230
OMOTOSHO GAS	76.8		336.8		114	222.8
OMOTOSHO NIPP	80		500		120	380
OLORUNSOGO (GAS)	157.4		336		228	108
OLORUNSOGO NIPP	90.3		750		120	630
SAPELE NIPP	80.9		500		112.5	387.5
SAPELE STEAM	60		720		60	660
AFAM IV-V	0		300		0	300
AFAM VI	124		650		150	500
GEREGU GAS	160		435		290	145
GEREGU NIPP	80		435		145	290
OKPAI (GAS/STEAM)	190		480		305	175
ALAOJI NIPP	41.5		504		120	384
IHOVBOR NIPP	0		450		0	450
IBOM	0		198		0	198
ODUKPANI NIPP	110.7		625		110.7	514.3
TOTAL	2059.6		9084.80		2850.2	6234.6

1 MMSCF IS EQUIVALENT TO 3.75MW

SYSTEM BLACK START CAPABILITY

Delta, Shiroro & Egbin - Available.

SPINNING RESERVE FOR : TUESDAY 08/08/2017

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

3.0 SYSTEM SPINNING RESERVE AS AT 0600HRS OF WEDNESDAY 09/08/2017 = 0MW. FREQUENCY 50.11Hz.

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	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Wednesday 09/08/2017 as at 0600Hrs was = 1854.3MW.

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	145	0	145	505
2	Alaoji NIPP GT1 & 4	240	0	240	
3	Omotosho NIPP GT4	120	0	120	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1662.56MMWSCF OF GAS (EQUIVALENT TO 6234.6MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
				0	0
				0	
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Afam VI GT13 & ST10	283.3	0	283.3	1349.3
2	Ihovbor GT1 & 2	225	0	225	
3	Olorunsogo NIPP GT1 & 3	240	0	240	
4	Omotosho Gas GT2, 3, 4, 6 & 8	190	0	190	
5	Shiroro 411G1	125	50	75	
6	Olorunsogo Gas GT3 & 5	76	0	76	
7	Omotosho NIPP GT2	120	0	120	
8	Shiroro 411G2	125	50	75	
9	Shiroro 411G3	125	60	65	
				0	
				0	
				0	
4.4 DUE TO WATER MANAGEMENT					
				0	1854.3
Total					

5.0 OUTAGES:

5(A) FORCED OUTAGES (GENERATION):-

- 03:33 - 18:58Hrs, Geregu Gas GT13 tripped on fire protection alarm. LHR = 16MW
- 06:26 – 10:57Hrs, Delta GT15 tripped on loss of flame. LHR = 90MW
- 11:31 - 16:03Hrs, Delta GT12 tripped on excitation system major trouble. LHR = 20MW

5(B) FORCED OUTAGES TRANSMISSION:-

- 01:49 – 02:19Hrs, Benin/Onitsha 330kV line 1 (cct B1T) CBs tripped at both ends on the following indications.
At Benin T/S: ABB relay- trip, start L1-L3, PE zone 1 & 2 trip, AR close DEF trip, fuse VTSZ, Z com CR , Z com CS, DEF CR and DEF CS trip – trip, trip – T IL, PHS – STFV (L1PE) ZM1 – trip, AR – in progress, DEF – Block, VTSZ, ZM2 and ZM3 – start, ZCIP – CSL1, ZCIP – CRLL, TOC – STL, HS – TRL. Fault loop = L, - N. Distance = 15.7km. fault loop = L, - N. Distance = 15.7km. Auxiliary relays: Tripping 85X and K86A flagged at Onitsha T/S
At Onitsha T/S: Ohmega relay: Zone 1 phase A – N. Micom Relay – Zone 1, start phase A – N, Distance start Z1, 2 & 3, O/C start 1, E/F start IN, trip time 64.00ms, location = 118.7km, single phase trip 3 phases, 3 phases trip 3 phases. No load loss as cct B2T was in service.
- 01:48Hrs – 02:07Hrs, Osogbo/Ihovbor and Ihovbor/Benin 330kV line (ccts H7V and V7B) CBs tripped at Ihovbor T/S only as follows:
On cct H7V – Micom relay: CB1, AR lock out, A/R state trip 1 and master trip, fault location – 529.5km. Load loss = 161MW.
On cct V7B – Micom relay: General phase N, E/F start IN>12, back up protection alarm, fault location = 128.4km. Load loss = 110MW.
- 03:20 – 03:29Hrs, Benin/Ajaokuta 330kV line 2 (cct B12J) CB tripped at Ajaokuta T/S on ABB relay – trip start L1, start PE, zone 2 trip, fuse – VTSZ, trip – trip, trip – TRL1, 2 & 3, PHS – STFVL1 & PE, ZMZ – trip EFC – CS, ZM 2 & 3 – start. Auxiliary relay: K86 ABC. No load loss at (cct B11J) was in service.
- 03:20 – 03:40Hrs, Benin/Irrua 132kV line CB tripped at Benin T/S on Nari relay- E/F and O/C 3 phases, period 227ms, fault location = 162km. Load loss = 19.9MW.
- 03:20 – 03:35Hrs, Osogbo/Ihovbor and Ihovbor/Benin 330kV line (ccts H7V and V7B) CBs tripped at Ihovbor T/S only as follows:
On cct H7V - Micom distance protection relay – zone 1 trip, CB1 and CB2 AR lock out, A/R state trip 1 and master trip fault location = 446.7km. LHR = 125.3MW
On cct V7B – start phase N E/F, start INZ12 back up protection alarm fault location = 132.1km. LHR = 146.5MW.
- 11:56 – 12:06Hrs, Ayede/Shagamu 132kV line CB tripped at Ayede T/S on Optimho relay – DEF delay, location = 26.34km. LHR = 40MW
- 19:54 - 20:05Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on instantaneous O/C. LHR = 64MW.

5(C) PLANNED OUTAGES:-

- 11:04 - 14:01Hrs, Benin 132kV T/S Bus coupler 1 CB was taken out for annual preventive maintenance. No load interrupted as the CB was not in service.
- 12:40 - 16:17Hrs, Maryland T/S 60MVA 132/33kV transformer T2 was taken out of service for maintenance crew to carry out annual preventive maintenance on the primary & secondary CBs. LHR = 27MW.
- 12:44 - 19:41Hrs, Ikot-Ekpene/Ugwuaji 330kV line 3 (cct K3U) was taken out to enable Energo contractor replace single string insulator with double string insulator at Ugwuaji T/S. No load interrupted as the line was on soak.

5(D) URGENT OUTAGES:-

- 10:47 - 15:43Hrs, Alaoji NIPP GT2 was shut down to enable isolation of Alaoji/Ikot-Ekpene 330kV line CB for repair work. LHR = 59.5MW
- 10:56 - 14:40Hrs, Afam VI GT11 was placed on house load due to switching operation at Alaoji T/S. LHR = 137MW
- 11:48 – 12:47Hrs, Alaoji/Ikot-Ekpene 330kV line 1 (cct A1K) CB was taken out at to allow Alaoji T/S isolate the bus CB that locked out in close position at Alaoji T/S. No load interrupted at the line was on soak.
- 12:17 - 19:45Hrs, Odukanpani NIPP GT1 was shut down due to high bearing temperature alarm. LHR = 115MW

6 GENERATOR MERIT ORDER BASED ON SYSTEM RESPONSE AND GRID RELIABILITY

GROUP 1 - ALL UNITS OFFERING FREE GOVERNOR FREQUENCY RESPONSE.

5(E) EMERGENCY OUTAGES:-

The under mentioned line was opened on frequency control:-

- 10:46 – 10:52Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line. LHR = 30MW

5(F) AUTOMATIC UNDER FREQUENCY OPERATION: NIL

5(G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- cct 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:- NIL

5(K) 330KV LINES THAT ARE OUT ON LINE FAULT:- NIL

9 WEATHER REPORT: NIL

10 INTERNATIONAL LINES:-

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

Maximum load - 185MW at 21:00Hrs.
Minimum load - 98MW at 07:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 81.0MW at 14:00Hrs.
Minimum load - 67MW at 06:00Hrs.

C KATSINA/GAZAQUA/MARADI 132KV LINE

Maximum load - 36.2MW at 20:00Hrs.
Minimum load - 23.5MW at 04:00Hrs.

11 MISCELLANEOUS:-

- 00:13 – 06:01Hrs, Shiroro 411G2 was shut down for frequency management. LHR = 120MW
- 00:37Hrs, Shiroro 411G1 load was reduced to 50MW for frequency management.
- 00:50 – 05:46Hrs, Jebba 2G2 was shut down for frequency management. LHR = 75MW
- 01:48 – 11:22Hrs, Ihovbor GT1 went on Island operation due to the tripping of (ccts H7V and V7B). Load reduced from 81.5MW to 14.3MW.
- 03:13Hrs, Kainji G/S was instructed to reduce generation by 50MW. Frequency was 50.41Hz.
- 06:23Hrs, Benin T/S 330kV 75MX Reactor was placed in service for voltage control. V/P 360/327kV.
- 10:37Hrs, Geregu NIPP was instructed to increase generation on GT22 to base load.
- 10:39Hrs, Egbin G/S was instructed to increase generation by 50MW.

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	30
OPTIC FIBRE	13	8
PLS	14	4

8 (B) SCADA RTU STATUS

STATIONS	TOTAL NO OF STATIONS	NO OF RTU INSTALLED	NO OF RTU WORKING
POWER STATIONS	23	8	3
330kV	41	17	11
132kV	119	103	14

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/SOLATORS

- 9 10:40Hrs, Okpai G/S was instructed to increase generation by 50MW.
- 10 11:05Hrs, Shiroro G/S was instructed to reduce generation on 1 unit to 50MW.
- 11 11:11Hrs, Delta GT10 was tied.
- 12 11:46Hrs, Odukpani/Ikot-Ekpene 330kV line 2 (cct D2K) was restored at both ends but voltage went to 350kV.
- 13 11:57Hrs, Egbin & Delta Power station were instructed to reduced generation by 50MW each. Frequency was 50.50Hz.
- 14 11:58Hrs, Geregu NIPP was instructed to reduced generation by 20MW.
- 15 12:08Hrs, Odukpani/Ikot-Ekpene 330kV line 2 (cct D2K) was taken out of service for voltage control after the maintenance crew have observed the new line CB at Ikot-Ekpene T/S and confirmed it okay. V/P 356/343kV
- 16 12:10 - 18:13Hrs, Delta GT16 was shut down for frequency management. LHR = 48MW.
- 17 12:20Hrs, Akangba T/S 150MVA 330/132/33kV transformer 5T4A was restored after the transformer had been tested okay. Note, the transformer tripped on REF at 03:54hrs of 05/08/2017.
- 18 12:51Hrs, Shiroro G/S was instructed to increase generation. Frequency was 50.18Hz.
- 19 13:27Hrs, Akangba T/S 90MVA 330/132/13.8kV transformer 5t2A was restored after it had been tested okay. Note, the transformer tripped on REF and bias differential protection at 03:54hrs of 05/08/2017.
- 20 14:26Hrs, Egbin P/S was instructed to increas generation by 55MW. Frequency wa 50.18Hz.
- 21 15:17Hrs, Afam VI GT11 was placed on governor control.
- 22 15:33Hrs, Ihovbor T/S 330kV bus bar 1 was energised after contrator had completed work on the switchyard extension be done for future connection of
- 23 16:28Hrs, Alaoji/Ikot-Ekpene 330kV line 2 (cct A2K) was restored. V/P = 325 at Alaoji T/S and 324kV at Ikot-Ekpene T/S.
- 24 19:44Hrs, Gbarain GT2 was tied. The unit had been out due to tripping of Alaoji/Owerri 132kV lines 1 & 2.
- 25 20:08Hrs, Olorunsogo Gas GT8 was tied. The unit had been out for frequency management.
- 26 20:42Hrs, Olorunsogo Gas GT4 was tied. The unit had been out on frequency management.
- 27 22:59Hrs, Kainji P/S was instructed to reduce generation by 100MW. Frequency was 50.43Hz.
- 28 23:32Hrs, Olorunsogo P/S was instructed to reduce generation to 25MW on its unit. Frequency was 50.54Hz.
- 29 23:46Hrs, Olorunsogo NIPP was instructed to reduce generation to 80MW. Frequency was 50.38Hz.
- 30 23:48Hrs, Odukpani was instructed to reduce generation from 116Mw to 80MW. Frequency was 50.36Hz.

12(D) LAGOS REGION

- 1 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S.
- 2 Agbara/Ojo line 1 on soak.

SHIRORO REGION:- Nil

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.

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.

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/Ikot-Ekpene 330KV line 2 (cct A2K) Yellow Phase isolator not latching property.

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.

12 (F) LINES WITH MISSING SKY WIRE

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/Iire 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) - 08056002757, CUG: 08129458475