TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT OF THURSDAY 05/09/2019

FOR: EVENTS OF WEDNESDAY 04/09/2019

EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	**25,790**	21:30	04/09/19
GENERATION CAPABILITY	**6394**	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	**4947.6**	-do-	-do-
PEAK GENERATION	**4219.5**	-do-	-do-
LOWEST GENERATION	**2137.6**	05:00	04/09/19
8-HOURLY DURATION PEAK	3003.9	0100-0800	-do-
	3459	0900-1600	-do-
	4219.5	1700-2400	-do-
PEAK GENERATION TO DATE	**5375**	**21:30**	**7/2/2019**
MAXIMUM AVAILABLE CAPACITY TO DATE	**7652.6**	**06:00**	**14/04/2014**
MAXIMUM ENERGY GENERATED (MWH) TO DATE	**111,004.89**	**0000-2400**	**03/04/2019**

1.2 CRITICAL VOLTAGE

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	**330**		
STATUTORY LIMITS	**280.5 - 346.6**		
HIGHEST VOLTAGE FOR THE DAY	376	Egbin T/S	05:00
LOWEST VOLTAGE FOR THE DAY	300	Yola & Gome T/S	08:00 & 21:00

1.3 FREQUENCY RANGE

	HZ	HRS
NOMINAL FREQUENCY	**50**	
STATUTORY LIMITS	**49.75-50.25**	
HIGHEST FREQUENCY	51.12	04:27
LOWEST FREQUENCY	50.03	21:38

1.4 SYSTEM COLLAPSE UPDATE

Date of last total collapse: 30th August, 2019	No. of days since last total collapse: 05
Date of last partial collapse: 12th April, 2018	No. of days since last partial collapse: 501
Highest No of days ever attained in-between total collapses: 134	Highest No of days ever attained in-between partial collapses: 243

		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	0	1	1	**8**
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	**22**
	Partial	--		--	--	--	--	--	--	2	0			**2**
2014	Total	2			2	0	3	1	0	0	1	0	0	**9**
	Partial	0	0	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			2	**12**
	Partial	0	0	0	1	0	0	0		0				**1**
2019	Total	4	1	0	1	1	1	0	1					**9**
	Partial	0	0	0	0	0	0	0	0					**0**

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

STATION		TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1	KAINJI	HYDRO	328	177
2	JEBBA	HYDRO	436	143
3	SHIRORO	HYDRO	600	175
4	EGBIN ST2 - 5	STEAM	331	171
5	SAPELE	STEAM	0	0
6	DELTA	GAS	463	241
7	AFAM IV-V	GAS	32	30
8	GEREGU GAS	GAS	136	100
9	OMOTOSHO GAS	GAS	101.9	76
10	OLORUNSOGO GAS	GAS	134.70	83.7
11	GEREGU NIPP	GAS	140	100
12	SAPELE NIPP	GAS	75.4	68.9
13	ALAOJI NIPP	GAS	72.5	0
14	OLORUNSOGO NIPP	GAS	0	0
15	OMOTOSHO NIPP	GAS	75.2	84.5
16	ODUKPANI NIPP	GAS	303	94.8
17	IHOVBOR NIPP	GAS	101.1	80.5
18	OKPAI	GAS	104	104
19	AFAM VI	GAS	137	117
20	IBOM POWER	GAS	63.2	64.1
21	ASCO	GAS	0	0
22	A.E.S	GAS	0	75
23	OMOKU	GAS	79.4	44.1
24	TRANS AMADI	GAS	66	25.9
25	RIVERS IPP	(GAS)	155	30
26	AZURA - EDO IPP	(GAS)	144	52.1
27	EGBIN ST6	(GAS)	0	0
28	PARAS ENERGY	(GAS)	68.6	0
29	GBARAIN NIPP	GAS	72.3	0
	TOTAL		**4219.5**	**2137.6**

1.6 **6025**

STATION		TURBINE	ENERGY GENERATED MWH	AV. POWER GENERATED MWH/H	ENERGY SENT OUT MWH	AV. POWER SENT OUT MWH/H
1	KAINJI	HYDRO	6466.00	269.42	6450.80	268.78
2	JEBBA	HYDRO	7420.00	309.17	7399.72	308.32
3	SHIRORO	HYDRO	9323.00	388.46	9294.17	387.26
4	EGBIN ST2 - 5	STEAM	6237.00	259.88	5834.70	243.11
5	SAPELE	STEAM	0.00	0.00	0.00	0.00
6	DELTA	GAS	8125.08	338.55	7989.10	332.88
7	AFAM IV-V	GAS	1045.87	43.58	1040.92	43.37
8	GEREGU GAS	GAS	2884.40	120.18	2862.29	119.26
9	OMOTOSHO GAS	GAS	2341.00	97.54	2320.50	96.69
10	OLORUNSOGO GAS	GAS	2491.00	103.79	2470.77	102.95
11	GEREGU NIPP	GAS	2770.25	115.43	2757.12	114.88
12	SAPELE NIPP	GAS	1535.71	63.99	1523.20	63.47
13	ALAOJI NIPP	GAS	767.94	32.00	748.44	31.19
14	OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15	OMOTOSHO NIPP	GAS	1776.00	74.00	1761.50	73.40
16	ODUKPANI NIPP	GAS	4829.56	201.23	4795.96	199.83
17	IHOVBOR NIPP	GAS	2060.00	85.83	2043.82	85.16
18	OKPAI	GAS	2625.60	109.40	2555.70	106.49
19	AFAM VI	GAS	2826.00	117.75	2711.37	112.97
20	IBOM	GAS	1501.19	62.55	1492.00	62.17
21	ASCO	GAS	0.00	0.00	0.00	0.00
22	AZURA - EDO IPP	GAS	2962.15	123.42	2935.70	122.32
23	A.E.S	GAS	0.00	0.00	0.00	0.00
24	OMOKU	GAS	1793.64	74.74	1756.74	73.20
25	TRANS AMADI	GAS	1175.80	48.99	1150.10	47.92
26	RIVERS IPP	GAS	2505.70	104.40	2492.10	103.84
27	EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28	PARAS ENERGY	GAS	1445.20	60.22	1437.40	59.89
29	GBARAIN NIPP	GAS	530.00	22.08	520.50	21.69
	TOTAL		**77,438.09**	**3,226.59**	**76,344.62**	**3,181.03**

1.7A **GENERATION POSITION AT 06:00HRS OF THURSDAY 05/09/2019**

	STATIONS	NO OF UNITS INSTALLED	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	330	1G5, 6, 11 & 12 4	330	263	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	578.4	475	2G1, 2 & 5 3	285	234	2G3 & 4 - Out due to low load demand by the Discos. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 4 4	600	420	411G2 & 3 - Generation reduced due to low load demand by the Discos.
	EGBIN STEAM	6	ST1, 2 , 5 & 6 4	880	655	ST1, 2 & 5 3	477	280	ST3 - Tripped on suspected control valve abnormal. ST4 - Out due to boiler feed pump problem. ST6 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Tripped due to loss of control oil pump. ST2 & 4 - Out on fault. ST3 - Yet to be tied since collapse of 30/08/2019.
	DELTA (GAS)	18	GT6, 10 - 13, 15 16, 19 & 20 10	570	540	GT6, 10 - 13, 16, 19 & 20 9	520	353	GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT7 & 15 - Out due to low load demand by the Discos. GT8 & 14 - Out on major overhaul. GT17 & 18 - Out due to generator lockout problem.
	AFAM IV & V (GAS)	8	0 0	0	0	0 0	0	0	GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 Out due to gas constraint. GT18 - Out due to low load demand by the Discos. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 1	145	100	GT12 - Generation reduced due to low load demand by the Discos. GT11 & 13 - Out due to low load demand by the Discos.
	OMOTOSHO GAS	8	GT1, 4, 5, 7 & 8 5	210	190	GT4, 5 & 8 3	104.1	104.1	GT1 & 7 - Out due to low load demand by the Discos. GT2, 3 & 6 - Out on gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4, 6 & 7 4	152	112.9	GT1, 3, 5 & 8 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos.
NIPP	GEREGU NIPP	3	0 0	0	0	0 0	0	0	GT21 - Out due to low load demand by the Discos. GT22 & 23- Out due to gas constraint.
	SAPELE NIPP	4	GT2 1	112.5	110	GT2 1	110	72.1	GT1 & 3 - Out due to gas constraint. GT4 - Out on maintenance.
	ALAOJI NIPP	4	GT1 1	125	110	GT1 1	110	72.6	GT1 - Generation reduced due to low load demand by the Discos. GT2 - Out due to high air inlet differential pressure. GT3 - Out due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	0 0	0	0	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP	4	GT2 1	120	120	GT2 1	120	74.8	GT1 - Out on maintenance. GT3 - Out due to gas constraint. Generation reduced due to low load demand by the Discos
	ODUKPANI NIPP	5	GT1 - 4 4	480	440	GT2 & 3 2	220	177.5	GT1 & 4 - Out due to low load demand by the Discos. GT5 - Out on E/F.
	IHOVBOR NIPP	4	GT2 1	112.5	110	GT2 1	110	78.1	GT1 - On manual adjustment. GT3 & 4- Out on maintenance.
	GBARAIN NIPP	1	GT2 1	112.5	112.5	GT2 1	112.5	73.7	GT2 - Generation reduced due to low load demand by the Discos
IPP	OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	104	GT11 & 12 - Generation reduced due to low load demand by the Discos. ST18 - Out on fault.
	AZURA - EDO	3	GT11 - 13 3	461	459	GT13 1	306	125	GT11 & 12 - Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT12, 13 & ST10 3	500	450	GT13 1	150	123	GT11 - Tripped on undisclosed fault. GT12 & ST10 - Out due to low load demand by the Discos.
	IBOM POWER GAS	3	GT3 1	112.5	110	GT3 1	110	46.3	GT1 & 2 - Out due to fire outbreak on the control panel. Generation reduced due to low load demand by the Discos
	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 - Out due to leakage in the furnace.
	OMOKU GAS	6	GT3 - 6 4	100	80	GT3 - 6 4	80	64.3	GT1 -Tripped on exhaust spread temperature high. GT2- Out on high vibration. Generation reduced due to low load demand by the Discos.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	70	GT1, 2 & 4 3	70	54.3	GT3 - Out on generator transformer limitation. Generation reduced due to low load demand by the Discos
	RIVERS	1	GT1 1	160	160	GT1 1	160	50	GT1 - Generation reduced due to low load demand by the Discos.
	SUB TOTAL	141	69	6820.4	6160.5	51	4571.6	2982.7	Frequency = 50.43Hz.

1.7B	GENERATION POSITION AT 06:00HRS OF THURSDAY 05/09/2019 FOR UNITS ON BILATERAL AGREEMENT								
	PARAS ENERGY	8	GT3 - 10 8	70	67.3	GT3 - 10 8	67.3	67.3	Available units on bar.
	SUB TOTAL	8	8	70	67.3	8	67.3	67.3	
	GRAND TOTAL	149	77	6890.4	6227.8	59	4,638.90	3050	Frequency = 50.43Hz.

1.7C	BILATERAL AGREEMENT UNITS DISPATCH - WEDNESDAY 04/09/2019 EGBIN ST6 5MW GENERATION T0 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	1	0700HRS			24		NIL
	PTC EXPRESS	6	1300HRS			24		NIL
	SANKYO	3	1000HRS			24		NIL
	FEEDER 8	13	1600HRS			24		NIL
IKORODU	PULK IT	1	0100HRS			24		NIL
	INDUSTRIAL	8	0800HRS			24		NIL
	SPINTEX	3	0100HRS			24		NIL
	DANGOTE	2	0100HRS			24		NIL
	LAND CRAFT	2	1900HRS			24		NIL
ALAUSA	TR4 - 15MVA	7	1200HRS			24		NIL
	TR5 -15MVA	6	1200HRS			24		NIL
	ALAUSA	16.2	1300HRS			24		NIL
M/LAND	PTC (MARYLAND)	16	1200HRS			22		PLANNED OUTAGE ON T2-60MVA 132/33KV TRANSFORMER
	TOTAL LOAD	**84.2**						

BILATERAL AGREEMENT LOAD DISPATCH 60MW PARAS ENERGY GENERATION TO CEB OF WEDNESDAY 04/09/2019							
	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
	68.9	**19:00**	**50.5**	**07:00**	**24**	**1439**	**NIL**

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI WEDNESDAY 04/09/2019									
COMPANY NAME	VOL-TAGE LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME	MIN LOAD (MW)	TIME	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	ON	ON	ON	ON	ON	ON	ON
KAM STEEL 2		25.0	12	02:00	0.1	11:00	18	**85.8**	NO TIME OUT
ASHAKA CEMENT		0	12	17:00	5.4	07:00	24	**231.7**	NO TIME OUT
XING 1	33kV feeder	0	19	22:00	1.8	11:00	24	**154.8**	NO TIME OUT
XING 2		0	12.6	21:00	0.4	09:00	24	**88.6**	NO TIME OUT
KAM INTEGRATED		15	4	01:00	1.4	11:00	18	**40.6**	NO TIME OUT
OLAM FLOUR MILLS		3	2.3	01:00	0.1	20:00	18	**20.8**	NO TIME OUT
LORDSMITH		3	0.5	16:00	0.3	01:00	24	**9.6**	NO TIME OUT
KAM STEEL LINE 1		**0**	12	19:00	0.2	0.46	18	**66.1**	NO TIME OUT

1.8 HYDROLOGICAL DATA: THURSDAY 05/09/2019

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	137.36	102.96	376.33
TAIL WATER ELEVATION (METERS)	105.04	75.5	270.5
GROSS OPERATING HEAD (METERS)	**32.32**	**27.46**	**105.83**
AVERAGE TURBINE DISCHARGE (M3/SEC)	939.00	1246.00	423.00
AVERAGE SPILLAGE (M3/SEC)	532.00	1158.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	**1471.00**	**2404.00**	**423.00**
COMPUTED INFLOW (M3/SEC)	3060.00	2612.00	1130.00
STORAGE DIFFERENTIAL	**1589.00**	**208**	**707**
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355.00

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT WEDNESDAY 04/09/2019

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	**574.6**	**22:00**	**507.64**	**299.3**	**04:00**
EKO	**0.0**	**0**	**0**	**0**	**0**
IKEJA	**595.7**	**19:00**	**762.15**	**247.1**	**05:00**

2.0 GAS POSITION: THURSDAY 05/09/2019

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	265	1100		477	623
DELTA (GAS)	305	915		520	395
OMOTOSHO GAS	100.4	336.8		104.1	232.7
OMOTOSHO NIPP	104.3	500		120	380
OLORUNSOGO (GAS)	233.4	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	87.2	500		110	390
SAPELE STEAM	47	720		0	720
AFAM IV-V	50	300		0	300
AFAM VI	220	650		150	500
GEREGU GAS	216	435		145	290
GEREGU NIPP	80	435		0	435
OKPAI (GAS/STEAM)	170	480		300	180
ALAOJI NIPP	0	504		112.5	391.5
IHOVBOR NIPP	114	337.5		110	227.5
IBOM	88.9	198		110	88
ODUKPANI NIPP	206.4	625		220	405
TOTAL	**2287.6**	**9122.30**		**2630.6**	**6491.7**

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : WEDNESDAY 04/09/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF THURSDAY 05/09/2019 = 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 GT3		0	
		GT4		0	
TOTAL (MW)			**295**	**0**	**0**

4.0 UN-UTILIZED GENERATION CAPABILITY

The un -utililized generation capability for Thursday 05/09/2019 as at 0600Hrs = 3081.7MW

S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB -TOTAL
	4.1 DUE TO LINE CONSTRAINTS				
				0	
1	Gbarain NIPP GT2	110	73.7	36.3	**36.3**
				0	
				0	
	4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS				
1	Jebba 2G3 & 4	190	0	190	**2928.6**
2	Olorunsogo gas GT1 - 8	304	112.9	191.1	
3	Geregu Gas GT11 - 13	435	100	335	
4	Odukpani NIPP GT1 & 4	220	0	220	
5	Azura-Edo GT11 - 13	459	125	334	
6	Egbin ST1, 2, 4 & 6	650	280	370	
7	Shiroro 411G 2 & 4	300	120	180	
8	Okpai GT11 & 12	300	104	196	
9	Afam VI GT12 & ST10	300	0	300	
10	Delta GT15, 16, 19 & 20	420	258	162	
11	Omotosho Gas GT1, 4, 5, 7 & 8	190	104.9	85.1	
12	Afam IV GT18	50	0	50	
13	Geregu NIPP GT21	145	0	145	
14	Omotosho NIPP GT3	120	74.8	45.2	
15	Omoku GT3 - 6	80	64.8	15.2	
16	Rivers IPP GT1	160	50	110	
17	Alaoji NIPP GT1	110	72.6	37.4	
18	Trans-Amadi GT1, 2 & 4	70	54.3	15.7	
19	Ibom GT3	110	46.3	63.7	
	4.3 DUE TO WATER MANAGEMENT				
			0	0	**0**
				0	
Grand Total					**3081.7**

5. 0 OUTAGES:`

5 (A) FORCED OUTAGES (GENERATION):

1 09:20 – 09:45Hrs, Ihovbor GT2 tripped on main Transformer high winding temperature alarm. LHR = 73.5MW

2 11:33 - 14:51Hrs, Sapele NIPP GT2 deloaded due to resistance temperature detector MCB trip. Load loss = 85.5MW.

5 (B) FORCED OUTAGES (TRANSMISSION):

1 03:21 - 04:52Hrs, Shagamu/Ijebu-Ode 132kV line CB tripped at Shagamu T/S on DEF. LHR = 22MW

2 04:26Hrs, Jebba/Ganmo & Osogbo/Ganmo 330kV lines (ccts J3G & H3G) CBs tripped at Ganmo T/S on over voltage protection relay. V/P: 368kV. LHR = 30MW
At 13:27Hrs, Jebba/Ganmo line was restored. At 10:58Hrs, Osogbo/Ganmo line was restored

3 04:29 – 08:23Hrs, Okpai/Onitsha 330kV line 2 (cct K2T) CB tripped at Onitsha T/S on over voltage (358kV). 48MW was diverted to cct K1T.

4 05:13 – 06:44Hrs, Ikeja-West/Agbara 132kV line 1 CB tripped at Ikeja-West T/S on Siprotec relay- General trip, Red phase fault, zone 1 trip 21pickup AG, PU time = 189ms, trip time = 0ms, distance = 7.3km.
Siemens: Numerical O/C & E/F relay- Directional O/C Red phase pickup,
Numerical LBB protection relay: LBB initiation 3-phases LBB initiation. LHR = 16MW

5 15:40 – 15:58Hrs, Uyo T/S 60MVA 132/33kV transformer T3 secondary CB tripped on SBEF. LHR = 11MW.

6 19:33 – 21:24Hrs, Mando/Kano 330kV line (cct M6N) CB tripped at Mando T/S on REL relay – Red & Yellow Phases, N time delay O/C , DEF carrier sent, trip relay MVAJ 2186A, 86B, fault location = no data. LHR = 148MW.

7 22:07 through 24:00Hrs, Kano T/S 150MVA 330/132/33kV transformer TR3A tripped on REF. LHR = 46MW.

8 21:25 through 24:00Hrs, Itire T/S 30MVA 132/33kV transformer T1 primary & secondary CBs tripped on the following relay indications:
On primary CB : Tripped on O/C and E/F
On secondary CB: Tripped on O/C Red & Yellow Phases. LHR = 14.6MW.

5 (C) PLANNED OUTAGES:-

1 10:15 - 18:20Hrs, Otta T/S 60MVA 132/33kV primary T2 was taken out for maintenance crew to carry out annual preventive maintenance on the Transformer and its associated equipment. Load loss = 14MW

5 (D) URGENT OUTAGES

1 10:27 – 10:54Hrs, Gombe T/S 45MVA 132/33kV Transformer T1 was taken out for maintenance crew to top the low oil on the Yellow phase of the primary CB to normal. Load loss = 3.5MW

2 10:51 - 17:37Hrs, Sapele/Delta 330kV line (cct S4G) was taken out for Delta maintenance crew to reconnect premium Steel Company after payment of their bill.
Load of 97MW was diverted to cct G3B.

3 10:50 - 17:42Hrs, Bauchi T/S 30/40MVA 132/33kV Transformer T2 was taken out for maintenance crew to check why the oil temperature gauge is not functioning and also carry calibration and test the winding temperature gauge. No load was interrupted as the Transformer was on soak.

4 12:25 – 17:26Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary & secondary CBs were opened to enable maintenance crew replace burnt Blue Phase isolator. Load loss = 16MW.

5 12:52 through 24:00Hrs, Onitsha/GCM 132kV line was taken out for maintenance crew to link Asaba 330kV line to GCM 132kV line in order to feed Asaba T/S from Onitsha T/S on 132kV level. Load loss = 21MW.
Note: Asaba T/S 150MVA 330/132/33kV Transformer is still out on fault.

6 13:45 – 15:33Hrs, Maryland T/S 60MVA 132/33kV transformer T1 was taken out for maintenance to change burnt bolts & nuts on the Yellow Phase CT & isolator clamp. Load loss = 10MW.

6 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 WITH EFFECTIVE POWER PURCHASE AGREEMENT (PPA)

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).

5 (E) EMERGENCY OUTAGES:- NIL

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- NIL

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts U1A,K3U, B11J & K1U.

5 (H) 330KV LINES THAT ARE OUT DUE TO DEFECTIVE CIRCUIT BREAKER: - cct A2K.

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

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- cct K4U

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

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

6 WEATHER REPORT:- Rainfall was reported at Delta & Kano.

7 INTERNATIONAL LINES:-

A IKEJA WEST/SAKETE 330KV LINE(TCN+PARAS)
Maximum load - 101MW at 20:00Hrs.
Minimum load - 47.4MW at 08:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE
Maximum load - 119MW at 15:00Hrs.
Minimum load - 104.0MW at 08:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE
Maximum load - 45.2MW at 23:00Hrs.
Minimum load - 33MW at 11:00Hrs.

11A COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	38	32
OPTIC FIBRE	13	11
PLS	14	4

11B SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	5	3
330kV	19	5	14
132kV	102	79	23

8 MISCELLANEOUS

1 00:22 through 24:00Hrs, Afam VI GT12 was shut down due to low load demand by the Discos. Load loss = 110MW
2 03:14 - 1&:56Hrs, Delta GT15 was shut down due to low load demand by the Discos. Load loss = 56MW
3 03:32 - 20:49Hrs, Odukpani NIPP GT2 was shut down due to low load demand by the Discos. Load loss = 65MW
4 04:14 through 24:00Hrs, Jebba/Shiroro 330kV line 1 (cct J3R) was taken out for voltage control. V/P: 350/345kV
5 04:17 - 05:11Hrs, Jebba 2G5 was shut down due to low load demand by the Discos. Load loss = 70MW
6 04:29 - 19:22Hrs, Olorunsogo Gas GT7 was shut down due to low load demand by the Discos. Load loss = 28.7MW
7 04:30 - 05:54Hrs, Kainji 1G5 was shut down due to low load demand by the Discos. Load loss = 25MW
8 04:37 - 12:24Hrs, Egbin ST2 was shut down due to low load demand by the Discos. Load loss = 110MW
9 08:21 - 10:58Hrs, Osogbo/Ganmo 330kV line CB was opened at Osogbo T/S due to high voltage. V/P: 352kV
10 08:21 - 13:27Hrs, Jebba/Ganmo 330kV line CB was opened at Jebba T/S due to high voltage. V/P: 350kV
11 10:00Hrs, Jebba 2G2 was tied to swap with 2G1.
12 10:01Hrs, Jebba 2G1 was shut down. Load of 91MW was transferred to 2G2.
13 10:14Hrs, Jebba 2G4 was tied. The unit was out due to low load demand by the Discos.
14 10:26Hrs, Odukpani GT3 was tied. The unit was out due to low load demand by the Discos.
15 12:17Hrs, Trans-Amadi GT1 was tied. The unit was out due to low load demand by the Discos.
16 13:13Hrs, Alaoji NIPP GT1 was tied. The unit was out due to low load demand by the Discos.
17 13:15Hrs, Jebba 2G1 was tied to swap with 2G5.
18 13:16 - 21:19Hrs, Jebba 2G5 was shut down. Load of 89MW was transferred to 2G1.
19 13:27Hrs, Odukpani NIPP GT4 was tied. The unit was out due to low load demand by the Discos.
20 15:36Hrs, Gbarain GT2 was tied. The unit was out due to the tripping of Alaoji/Owerri 132kV line 2.
21 17:01Hrs, Shiroro 411G4 was tied. The unit was out due to low load demand by the Discos.
22 17:43Hrs, Odukpani/Ikot-Ekpene 330kV line 2 cct D2K closed. The line out since the System disturbance of 30/08/2019.
23 20:59Hrs, Odukpani GT4 was shut down due to low load demand by the Discos.
24 23:33 through 24:00Hrs, Jebba 2G4 was shut down due to low load demand by the Discos. . Load loss = 80MW.

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

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

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 Egbin/Oke-Aro 330kV line 2 (N8K) Defective. Needs replacement.
7 Egbin/Ikeja-West Tie CB Defective. Needs replacement.

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.

8 Egbin/Aja 330kV line 3 (cct N3J) - Tie CB defective.Needs replacement.

BENIN REGION:

1 Omotosho T/S 330kV, 2nd series 330kV CB #3322 out due to control circuit problem.

PORT HARCOURT REGION:

1 cct A1K CB

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.

ABUJA REGION

1 Gwagwalada/Katampe 330kV line CB cct J5B - Faulty breaker at Gwagwalada T/S

CRITICAL VOLTAGE NODES IN THE GRID

S/N	NODE	VOLTAGE	REMARKS
1	Egbin T/S	376kV	Low VAR absorption by Egbin P/S.
2	Ganmo T/S	368kV	No Reactor
3	Ayede T/S	360kV	No Reactor
4	Benin T/S	359kV	One Reactor in service.
5	Omotosho T/S	358kV	Low VAR absorption by Omotosho P.S/NIPP.
6	Sapele T/S	358kV	Low VAR absorption by Sapele P.S/NIPP

FOR MORE INFORMATION: NCC Telephone Lines -

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

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) - 08105894708, CUG: 07016228668

f NCC e-mail address - nationalcontrol@gmail.com

g SYSTEM OPERATIONS WEB SITE: www.nigeriasystemoperator.org.