

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF MONDAY 05/11/2018

FOR: EVENTS OF SUNDAY 04/11/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,900	21:15	04/11/2018
GENERATION CAPABILITY	7322.4	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5268.7	-do-	-do-
PEAK GENERATION	4510.1	-do-	-do-
LOWEST GENERATION	3226.4	09:00	04/11/2018
8-HOURLY DURATION PEAK	3703	0100-0800	-do-
	4071.7	0900-1600	-do-
	4510.1	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	351	Ikot-Ekpene T/S	09:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso T/S	19:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.90	08:32
LOWEST FREQUENCY	50.19	20:23

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 20th Sept, 2018		No. of days since last total collapse: 44												
Date of last partial collapse: 12th April, 2018		No. of days since last partial collapse: 203												
Highest No of days ever attained in-between total collapses: 134		Highest No of days ever attained in-between partial collapses: 240												
		Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total
2010	Total	---	3	1	--	3	3	3	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	2	--	6
2012	Total	--		2	1	5	2	1	--	--	2	2	1	16
	Partial	--		2	3	--	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	22
	Partial	--		--	--	--	--	--	--	2				2
2014	Total	2			2	0	3	1	0	0	1	0	0	9
	Partial			0	0	1	0	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	0	0	0	1	0	6
	Partial	--	--	1	0	2	0		0	0	1	0	0	4
2016	Total	--	--	2	3	6	5	0	0	1	1	2	2	22
	Partial	--	--	1	0	1	3	1	0	0	0	0	0	6
2017	Total	5	3	0	3	1	1	0	0	1	1			15
	Partial	1	0	1	0	0	0	1	0	3	3			9
2018	Total	5	1	0	0	0	1	1						10
	Partial	0	0	0	1	0				0				1

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	370	342
2 JEBBA	HYDRO	402	364
3 SHIRORO	HYDRO	578	220
4 EGBIN ST2 - 5	STEAM	504	339
5 SAPELE	STEAM	50	50
6 DELTA	GAS	506	340
7 AFAM IV-V	GAS	60	0
8 GEREGU GAS	GAS	121	80
9 OMOTOSHO GAS	GAS	139.7	140.6
10 OLORUNSOGO GAS	GAS	0	0
11 GEREGU NIPP	GAS	0	0
12 SAPELE NIPP	GAS	117.3	147.1
13 ALAOJI NIPP	GAS	109.8	71.1
14 OLORUNSOGO NIPP	GAS	106.1	89
15 OMOTOSHO NIPP	GAS	158	131.2
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	91.3	80.6
18 OKPAI	GAS	120	70
19 AFAM VI	GAS	120	100
20 IBOM POWER	GAS	88.6	52.7
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	55.1	38.2
24 TRANS AMADI	GAS	36.7	0
25 RIVERS IPP	(GAS)	145	105
26 AZURA - EDO IPP	(GAS)	375	225
27 EGBIN ST6	(GAS)	112	109
28 PARAS ENERGY	(GAS)	66.2	67.8
29 GBARAIN NIPP	GAS	78.3	64.1
TOTAL		4510.1	3226.4

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	9661.00	402.54	9645.80	401.91
2 JEBBA	HYDRO	10020.00	417.50	9996.88	416.54
3 SHIRORO	HYDRO	8521.00	355.04	8493.37	353.89
4 EGBIN ST2 - 5	STEAM	9245.00	385.21	8887.20	370.30
5 SAPELE	STEAM	1075.00	44.79	1015.20	42.30
6 DELTA	GAS	9089.99	378.75	8926.30	371.93
7 AFAM IV-V	GAS	591.00	24.63	585.91	24.41
8 GEREGU GAS	GAS	2418.10	100.75	2398.22	99.93
9 OMOTOSHO GAS	GAS	3008.00	125.33	2985.20	124.38
10 OLORUNSOGO GAS	GAS	0.00	0.00	0.00	0.00
11 GEREGU NIPP	GAS	0.00	0.00	0.00	0.00
12 SAPELE NIPP	GAS	3430.12	142.92	3410.42	142.10
13 ALAOJI NIPP	GAS	1840.50	76.69	1840.49	76.69
14 OLORUNSOGO NIPP	GAS	2301.00	95.88	2253.90	93.91
15 OMOTOSHO NIPP	GAS	3504.80	146.03	3479.00	144.96
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2040.38	85.02	2020.28	84.18
18 OKPAI	GAS	2952.00	123.00	2845.80	118.58
19 AFAM VI	GAS	2662.19	110.92	2567.57	106.98
20 IBOM	GAS	1445.44	60.23	1437.00	59.88
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	7126.40	296.93	7102.70	295.95
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1050.60	43.78	1023.31	42.64
25 TRANS AMADI	GAS	602.60	25.11	583.20	24.30
26 RIVERS IPP	GAS	2535.20	105.63	2525.60	105.23
27 EGBIN ST6	STEAM	3257.00	135.71	3083.90	128.50
28 PARAS ENERGY	GAS	1626.10	67.75	1621.70	67.57
29 GBARAIN NIPP	GAS	1707.50	71.15	1693.80	70.58
TOTAL		91,710.92	3,821.29	90,422.75	3,767.61

1.7A GENERATION POSITION AT 06:00HRS OF MONDAY 05/11/2018

	STATIONS	NO OF INSTALLED UNITS	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS (MW) AT 50.48Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	420	1G5, 6, 11 & 12 4	420	379	1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 1G9 - Out due to burnt 7.5MVA 33/0.415kV & 183.6MVA 16/330kV station service transformer and generator transformer. 1G10 - Shut down due to thrust bearing temperature problem.
	JEBBA HYDRO	6	2G1 - 5 5	475	475	2G1 - 5 5	445	436	2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 4 4	600	415	411G2 & 3 - Generation reduced due to low load demand by the Discos.
	EGBIN STEAM	5	ST2, 4 & 5 3	660	600	ST2, 4 & 5 3	600	339	ST1 - Out due to undisclosed fault since 04/09/2018. ST3 - Out on high vibration since 19th June 2017. Generation reduced due to low load demand by the Discos.
	SAPELE (STEAM)	6	ST2 1	120	60	0 0	0	0	ST1 & 3 - Tripped on low drum level. ST2 - Out due to low load demand by the Discos. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT7, 9 - 13, 15, 16 & 19 & 20 10	545	545	GT7, 9 - 13, 15, 16 & 19 9	435	427	GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. GT20 - Out due to low load demand by the Discos.
	AFAM IV & V (GAS)	8	GT18 1	120	120	GT18 1	63	63	GT1 - 12 - De-commissioned and scrapped. GT13,14 & 16 - Out on blade failure. GT17 - Out due to technical issue. GT19 & 20 - Awaiting major overhaul. Generation reduced due to low load demand by the Discos
	GEREGU GAS	3	GT11 1	145	145	GT11 1	145	121	GT12 & 13 - Tripped on natural gas valve position.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2, 6 & 8 4	152	122.6	GT3 - 5 & 7- Out due to low load demand by the Discos. Generation reduced due to low load demand by the Discos
	OLORUNSOGO GAS	8	GT1 - 8 8	304	304	0 0	0	0	GT1 - 8 - Out due to maintenance work at gas station.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	0 0	0	0	GT21 - Out on maintenance. GT22 & 23 - Out due to gas constraint.
	SAPELE NIPP	4	GT1, 2 & 4 3	337.5	337.5	GT1 1	112.5	80.4	GT2 - Out due to low load demand by the Discos. GT3 - Out due to air inlet differential pressure high. GT4 - Out due to gas constraint.
	ALAOJI NIPP GAS	4	GT1 & 2 2	240	240	GT2 1	120	70.3	GT1 - Out due to low load demand by the Discos. GT2 - Generation reduced due to low load demand by the Discos. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip.
	OLORUNSOGO NIPP	6	GT1 & 2 2	250	240	GT2 1	120	98.6	GT1 - Out due to low load demand by the Discos. GT3 - Out on maintenance. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance. Generation reduced due to low load demand by the Discos.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT1 & 2 2	240	158.4	GT4 - Out due to low load demand by the Discos. GT3 - Out on lube oil leakage.
	ODUKPANI NIPP	5	0 0	0	0	0 0	0	0	GT1 & 2 - Out on fault. GT3 & 5 - Out due to gas leakage. GT4 - Tripped on main transformer neutral O/C and HV protection.
	IHOVBOR NIPP	4	GT2 & 4 2	225	225	GT4 1	112.5	88.2	GT1 - Out on fault. GT2 - Out due to low load demand by the Discos. GT3 - Tripped on high vibration.
	GBARAIN NIPP GAS	1	GT2 1	115	112.5	0 0	0	0	GT2 - Tripped due to tripping of Alaoji/Owerri 132kV lines 1 & 2.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	370	370	GT11, 12 & ST18 3	290	183	GT11 - Generation reduced due to gas constraint. ST18 - Generation reduced due to boiler problem.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT11 - 13 3	461	225	GT11- 13 - Generation reduced due to low load demand by the Discos.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT11 1	150	114	GT12 - Out due to low load demand by the Discos. GT13 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	62.6	GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - Generation reduced due to line constraint
	AES	9	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2 & 5 3	75	70	GT1, 2 & 5 3	70	55.8	GT3 - Tripped on over speed. GT4 - Out on major overhaul. GT6 - Out on maintenance. Generation reduced due to low load demand by the Discos.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1 & 2 2	40	35.6	GT4 - Tripped on low gas pressure. GT3 - Out on fault.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out due to lube oil interlock problem
	SUB TOTAL	140	77	7323.5	7094	50	4691	3474.5	Frequency = 50.48Hz.

1.7B GENERATION POSITION AT 06:00HRS OF MONDAY 05/11/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	ST6	220	111	ST6	111	111	Available unit on bar.
		1			1			
PARAS ENERGY	8	GT2 - 9	70	67	GT2 - 9	67	67	Available units on bar.
		8			8			
SUB TOTAL	9	9	290	178	9	178	178	
GRAND TOTAL	149	86	7613.5	7272	59	4,869.00	3,652.50	Frequency = 50.48Hz

1.7C		BILATERAL AGREEMENT UNITS DISPATCH - SUNDAY 04/11/018							
		EGBIN ST6 5MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY							
	FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK	
OGBA	U-STEEL	ON	1:00			24		NIL	
	PTCEXPRESS	ON	1:00			24		NIL	
	SANKYO	ON	1:00			24		NIL	
	FEEDER 8	12	22:00			24		NIL	
IKORODU	PULK IT					24		NIL	
		1	100						
	INDUSTRIAL	8	2100			24		NIL	
	SPINTEX					24		NIL	
		1	100						
	DANGOTE	ON	100			24		NIL	
	LAND CRAFT	18	700			24		NIL	
ALAUUSA	TR4 15MVA	4.1	1:00			24		NIL	
	TR5 -15MVA	3.7	11:00			24		NIL	
	ALAUUSA	11.5	10:00			24		NIL	
M/LAND	PTC (MARYLAND)	18	10			24		NIL	
	TOTAL LOAD								

BILATERAL AGREEMENT LOAD DISPATCH							
60MW PARAS ENERGY GENERATION TO CEB OF SUNDAY 04/11/018							
FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	70.2	13:00	66.2	02:00	24	1626.1	Nil

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: SUNDAY 04/11/018									
COMPANY NAME	VOLTAGE LEVEL	CONTRACTUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line 2	0	48	02:00	28	18:00	24	728	SUPPLY NOT INTERRUPTED
KAM STEEL		15.0	4.2	01:00	0.2	05:00	24	14.4	SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0.0	10.3	01:00	3.9	11:00	24	195.3	SUPPLY NOT INTERRUPTED
XING 1	33kV feeder	0.0	16.8	21:00	0.6	01:00	24	252	SUPPLY NOT INTERRUPTED
XING 2		0.0	25.2	23:00	0.65	03:00	24	388.9	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15.0	4.2	05:00	1.2	23:00	24	52	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	1.7	05:00	0	09:00	24	6.1	SUPPLY NOT INTERRUPTED
LORDSMITH		0	32	10:00	31	01:00	24	757.5	SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: MONDAY 05/11/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.74	103.26	381.80
TAIL WATER ELEVATION (METERS)	105.25	74.6	271.0
GROSS OPERATING HEAD (METERS)	36.49	28.66	110.80
AVERAGE TURBINE DISCHARGE (M3/SEC)	1208.00	1607.00	389.00
AVERAGE SPILLAGE (M3/SEC)	284.00	13.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1492.00	1620.00	389.00
COMPUTED INFLOW (M3/SEC)	1624.00	1655.00	153.00
STORAGE DIFFERENTIAL	132.00	35	-236
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 05/11/018

	MAXIMUM LOAD (MW)	TIME (HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD (MW)	TIME (HRS)
ABUJA	512.4	14:00	528.38	372.1	07:00
EKO	396.5	14:00	605.40	257.1	09:00
IKEJA	597.9	22:00	584.19	390.1	05:00

2.0 GAS POSITION: MONDAY 05/11/2018

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCF/D)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EGBIN P/S	226	1100		600	500
DELTA (GAS)	430	915		435	480
OMOTOSHO GAS	0	336.8		152	184.8
OMOTOSHO NIPP	0	500		240	260
OLORUNSOGO (GAS)	185.2	336		0	336
OLORUNSOGO NIPP	151.9	750		120	630
SAPELE NIPP	112.9	500		112.5	387.5
SAPELE STEAM	50	720		0	720
AFAM IV-V	63	300		63	237
AFAM VI	117	650		150	500
GEREGU GAS	122	435		145	290
GEREGU NIPP	0	435		0	435
OKPAI (GAS/STEAM)	229	480		290	190
ALAOJI NIPP	79.9	504		120	384
IHOVBOR NIPP	150.1	112.5		112.5	0
IBOM	0	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	1917	8897.30		2655	6242.3

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : SUNDAY 04/11/018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF MONDAY 05/11/2018 = 0MW. FREQUENCY Hz

S/N	POWER STATION	UNIT ON SPINNING RESERVE	CONTRACTED RESERVE	ACTUAL RESERVE (MW)	TOTAL (MW)
1	Egbin	ST2	100	0	0
		ST4		0	
		ST5		0	
		ST6		0	
2	Delta	GT16	40	0	0
		GT17	40	0	
3	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
4	Geregu NIPP	GT22	35	0	0
5	Omosho NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Monday 05/11/2018 as at 0600Hrs was = 3052.4MW.					
S/N	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Okpai GT11	145	30	115	1162.5
2	Afam VI GT13 & ST10	340	0	340	
3	Geregu NIPP GT22 & 23	290	0	290	
4	Sapele NIPP GT4	112.5	0	112.5	
5	Olorunsogo GT1 - 8	305	0	305	
				0	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1664.611MMSCF OF GAS (EQUIVALENT TO 6242.3MW WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
1	Ibom GT3	115	62.6	52.4	164.9
2	Gbarain NIPP GT2	112.5	0	112.5	
				0	
				0	
				0	
4.3 DUE TO LOW LOAD DEMAND BY THE DISCOS					
1	Ihovbor GT2	112.5	0	112.5	1725
2	Azura-Edo GT11 - 13	461	225	236	
3	Omosho Gas GT1 - 8	304	122.6	181.4	
4	Shiroro 411G2 & 3	300	117	183	
5	Delta GT20	110	0	110	
6	Alaoji NIPP GT1 & 2	240	70.3	169.7	
7	Afam VI GT12	150	0	150	
8	Olorunsogo NIPP GT1 & 2	240	98.6	141.4	
9	Egbin ST2, 4 & 5	600	339	261	
10	Omosho NIPP GT4	120	0	120	
11	Sapele Steam ST2	60	0	60	
				0	
				0	
				0	
				0	
4.1 DUE TO WATER MANAGEMENT:					
					0
Grand Total					3052.4

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION):

- 03:24 - 17:37Hrs, Omoku GT1 tripped on lube oil shortage. LHR = 14.2MW
- 08:35 - 14:25Hrs, Afam IV GT18 tripped on technical problem. LHR = 55MW
- 14:55 - 20:10Hrs, Afam IV GT18 tripped on control system safety oil problem. LHR = 55MW
- 22:37 through 24:00Hrs, Gbarain P/S GT2 tripped due to tripping of Alaoji/Owerri 132kV lines 1 & 2. LHR = 72.3MW

5(B) FORCED OUTAGES (TRANSMISSION):

- 15:21 - 15:41Hrs, Omotosho/Ikeja-West 330kV line (cct M5W) CBs tripped at both ends on the following relay indications:
At Omotosho T/S:
PSL 601: Distance protection relay, RTIPC, ground distance zone 1, trip zero sequence zone 1 trip, phase C, trip phase ground, distance = 43.9km
PSL 602: Distance protection relay, RTIPC, ground distance zone 1, trip zero sequence zone 1 trip, phase C, trip phase ground, distance = 43.83km
At Ikeja-West T/S:
Siprotec relay: Red phase fault 50N/51N pickup, PU time = 110ms, distance = -13.2km, numerical distance relay, general trip, Red & Blue phases fault, distance = Z1 trip. No load loss as ccts B5M & H1W were in service.
- 15:56 - 16:21Hrs, Benin/Irrua 132kV line CB tripped at Benin T/S on NARI relay: O/C 3 phases, zone 1, period = 36ms, distance = 42.44km. LHR = 18MW
- 16:34 - 18:50Hrs, Ajaokuta/Steel works 132kV line CB tripped on IDMT O/C 3 phases. LHR = 6MW
- 17:10 - 17:31Hrs, Osogbo/Ikeja-West 330kV line (cct H1W) CBs tripped at both ends on the following relay indications:
At Osogbo T/S:
Siprotec relay: Relay trip, Red phase & E/F, distance pick up LIE, PE time = 74ms, trip time = 20ms, distance = 215.8km, Auxiliary 85 X 2 and tripping 86T
Ohmega relay: Phase A, earth aided trip, carrier receive 2 and 86A 12, distance = 222.35km
At Ikeja-West T/S:
Siprotec relay: General trip, RPH fault, zone 1 trip, Zcom trip, 5X-B, PUIP, phase A PU time = 60ms, trip time = 1ms, distance = 27.2km
Micom relay: General trip, RPH fault, distance zone 1 trip, carrier sent, started phase A-N, trip phase A, O/C start I<2,34 earth fault start IN 1,2,3, distance trip Z1, fault duration = 72.37ms, relay trip time = 80.60ms, fault location = 28 12km. LHR = 119MW. No load loss as ccts H2A and R1W were in service.
- 22:37 - 22:57Hrs, Alaoji/Owerri 132kV lines 1 & 2 CBs tripped at Owerri T/S on the following relay indications:
Line 1: Siemens Relay: Directional E/F. LHR = 28MW
Line 2: Optimho relay : DEF start, location = 276.1km, period = 84ms,
Siemens relay: Relay trip, instantaneous trip ie>>, Blue phase, backup protection. LHR = 28MW

5 (c) PLANNED OUTAGES:-

- 06:30 through 24:00Hrs, Okpai ST18 was shut down to carry out maintenance on the unit. Load loss = 67MW
- 06:48 - 19:17Hrs, Okpai GT12 was shut down to carry out maintenance on the unit. Load loss = 112MW

5(D) URGENT OUTAGES:-

- 08:55Hrs, Trans-Amadi GTs 1 & 2 were shut down due to pressure control valve problem. Load loss = 15.2MW & 15.9MW respectively.
14:04Hrs, GT2 was tied. 14:10Hrs, GT1 was tied,
- 10:33 - 11:11Hrs, Jebba/Osogbo 330kV line 1 (cct J1H) was taken out to build up low SF6 gas pressure of Yellow phase pole line GCB to normal at Osogbo T/S. No load loss as ccts J3G & H3G were in service.
- 12:25 - 14:02Hrs, Kaduna Town T/S 60MVA 132/33kV transformer T1B CB was taken out to treat hot spot on the Yellow phase secondary conductor clamp. LHR = 18MW

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).

5 (E) EMERGENCY OUTAGES:- NIL.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:-

5 (G) 330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:- ccts K4U, L7G, A1S & U1A.

5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- cct A1K.

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

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts D3T & J2H

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

6 WEATHER REPORT:- Rainfall reported at Ayede, Ihovbor, Osogbo,

7 INTERNATIONAL LINES:-

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

Maximum load - 293MW at 19:00Hrs.

Minimum load - 215MW at 07:00Hrs.

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	10
PLS	14	4

11 SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	7	1
330kV	19	11	8
132kV	102	92	10

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

- 1 Birnin Kebbi 75MX Reactor R1.

ABUJA REGION

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

KADUNA REGION:

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

BAUCHI REGION:

- 1 Gombe T/S -30MX Reactor R2A.

ENUGU REGION:

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

LAGOS REGION:

- 1 Oke-Aro T/S: 75MX Reactor R1.

PORT HARCOURT REGION

- 1 Ikot-Ekpene T/S: No reactor installed.

12 (B) UNAVAILABLE BREAKERS/ISOLATORS

LAGOS REGION:

- 1 Akangba T/S. 132kV Bus Coupler CB - Serious Air leakage.(Undergoing repair)
- 2 Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- 3 Otta/Ogba 132kV line isolator - defective control shaft.
- 4 Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole .
- 5 Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- 6 Omotosho/Ikeja West 330kV line CB at Ikeja West T/S.

BENIN REGION:

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

ENUGU REGION:

- 1 New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 2 Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the transformers are protected by Nkalagu 132kV line CB.
- 3 Oji River T/S 30MVA 132/33kV transformer T1A primary CB - The breaker is completely out of service and bypassed. The transformer is either protected by Onitsha/Oji 132kV line CB or New Haven/Oji 132kV line CB.
- 4 Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 104MW at 22:00Hrs.
Minimum load - 79MW at 08:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 36MW at 22:00Hrs.
Minimum load - 19MW at 08:00Hrs.

8 MISCELLANEOUS:-

- 1 05:48Hrs, Omotosho gas GT2 was tied. The unit was out due to maintenance on gas supply station.
 - 2 06:20Hrs, Ibom GT3 was tied. The unit was out due to tripping of Aba/Itu 132kV line.
 - 3 06:40Hrs, Omotosho gas GT1 was tied. The unit was out due to maintenance on gas supply station.
 - 4 11:58Hrs, Azura-Edo IPP increased generation to maximum to improve the frequency.
 - 5 12:17Hrs, Azura-Edo IPP increased generation to maximum to improve the frequency.
 - 6 13:36Hrs, Azura-Edo IPP increased generation to maximum to improve the frequency.
 - 7 14:39Hrs, Alaoji/Aba 132kV line 1 CB was restored. The line was taken out for maintenance at 10:25Hrs of 03/11/2018.
 - 8 18:28Hrs, Alaoji/Aba 132kV line 2 CB was restored. The line was taken out for maintenance at 10:25Hrs of 03/11/2018.
 - 9 20:34Hrs, Delta P/S GT20 was tied. The unit was out due to low load demand by the Discos.
- **** LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.
**** THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

12(D) UNAVAILABLE CAPACITOR BANK:

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

12(E) UNAVAILABLE SKYWIRES

LAGOS REGION

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

SHIRORO REGION

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

ABUJA REGION

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

12 (F) UNAVAILABLE SYNCHROSCOPES :

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

FOR MORE INFORMATION: NCC Telephone Lines -

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

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.

