

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF FRIDAY 03/08/2018

FOR: EVENTS OF THURSDAY 02/08/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,560	21:30	02/08/2018
GENERATION CAPABILITY	7973.9	-do-	-do-
UNITS ON BAR CAPABILITY AT PEAK	5285.7	-do-	-do-
PEAK GENERATION	4686.2	-do-	-do-
LOWEST GENERATION	3233.9	04:00	02/08/2018
8-HOURLY DURATION PEAK	3813.7	0100-0800	-do-
	3860.4	0900-1600	-do-
	4686.2	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	362	Jos T/S	22:26
LOWEST VOLTAGE FOR THE DAY	297	Sakete & Makurdi T/S	20:00 & 21:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.84	00:59
LOWEST FREQUENCY	50.04	12:09

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8th July, 2018	No. of days since last total collapse: 16
Date of last partial collapse: 12 th April, 2018	No. of days since last partial collapse: 108
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	1	4	22	
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13
	Partial	--	1	1	--	--	--	--	1	--	1	2	--	6
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16
	Partial	--	--	2	3	--	--	--	--	1	--	1	1	8
2013	Total	--	1	2	2	3	4	1	1	1	4	2	22	
	Partial	--	--	--	--	--	--	--	2				2	
2014	Total	2		2	2	0	3	1	0	0	1	0	9	
	Partial			0	0	1	0	0	0	0	0	2	1	4
2015	Total	1	0	1	0	2	0	1	0	0	1	0	6	
	Partial	--	--	1	0	2	0	0	0	1	0	0	4	
2016	Total	--	--	2	3	6	5	0	0	1	2	2	22	
	Partial	--	--	1	0	1	3	1	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					8	
	Partial	0	0	0	1	0							1	

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)
1 KAINJI	HYDRO	301	206
2 JEBBA	HYDRO	404	261
3 SHIRORO	HYDRO	595	338
4 EGBIN ST2 - 5	STEAM	589	504
5 SAPELE	STEAM	52	0
6 DELTA	GAS	485	251
7 AFAM IV-V	GAS	60	0
8 GEREGU GAS	GAS	133	140
9 OMOTOSHO GAS	GAS	138.9	91.3
10 OLORUNSOGO GAS	GAS	133.2	123.3
11 GEREGU NIPP	GAS	129	80
12 SAPELE NIPP	GAS	180.3	118.3
13 ALAQJI NIPP	GAS	80.2	81.3
14 OLORUNSOGO NIPP	GAS	107.5	0
15 OMOTOSHO NIPP	GAS	101.9	76.8
16 ODUKPANI NIPP	GAS	0	0
17 IHOVBOR NIPP	GAS	112.9	70.1
18 OKPAI	GAS	268	269
19 AFAM VI	GAS	130	102
20 IBOM POWER	GAS	102.5	81.8
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	55.1	21.4
24 TRANS AMADI	GAS	65.7	31.6
25 RIVERS IPP	(GAS)	30	95
26 AZURA - EDO IPP	(GAS)	267	225
27 EGBIN ST6	(GAS)	0	0
28 PARAS ENERGY	(GAS)	70.2	67
29 GBARAIN NIPP	GAS	94.8	0
TOTAL		4686.2	3233.9

1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	6253.00	260.54	6236.30	259.85
2 JEBBA	HYDRO	7658.00	319.08	7635.08	318.13
3 SHIRORO	HYDRO	9879.00	411.63	9852.97	410.54
4 EGBIN ST2 - 5	STEAM	12514.00	521.42	11723.50	488.48
5 SAPELE	STEAM	724.90	30.20	627.50	26.15
6 DELTA	GAS	10140.66	422.53	9929.10	413.71
7 AFAM IV-V	GAS	439.00	18.29	434.67	18.11
8 GEREGU GAS	GAS	2812.50	117.19	2789.49	116.23
9 OMOTOSHO GAS	GAS	2595.00	108.13	2573.70	107.24
10 OLORUNSOGO GAS	GAS	3055.07	127.29	3026.90	126.12
11 GEREGU NIPP	GAS	2385.25	99.39	2371.86	98.83
12 SAPELE NIPP	GAS	3896.84	162.37	3877.15	161.55
13 ALAQJI NIPP	GAS	1995.44	83.14	1980.15	82.51
14 OLORUNSOGO NIPP	GAS	377.10	15.71	343.20	14.30
15 OMOTOSHO NIPP	GAS	2213.80	92.24	2197.60	91.57
16 ODUKPANI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2088.88	87.04	2074.17	86.42
18 OKPAI	GAS	6572.00	273.83	6402.60	266.78
19 AFAM VI	GAS	2794.42	116.43	2705.28	112.72
20 IBOM	GAS	1936.68	80.70	1928.00	80.33
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	5858.25	244.09	5841.70	243.40
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1209.00	50.38	1178.80	49.12
25 TRANS AMADI	GAS	1257.20	52.38	1231.70	51.32
26 RIVERS IPP	GAS	2452.00	102.17	2445.89	101.91
27 EGBIN ST6	STEAM	0.00	0.00	0.00	0.00
28 PARAS ENERGY	GAS	1640.00	68.33	1635.30	68.14
29 GBARAIN NIPP	GAS	386.70	16.11	377.80	15.74
TOTAL		93,134.69	3,880.61	91,420.41	3,809.18

1.7A GENERATION POSITION AT 06:00HRS OF FRIDAY 03/08/2018

	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 50.49Hz.	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6, 11 & 12 4	440	440	1G5, 6, 11 & 12 4	285	285	1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 1G9 - Out due to burnt 7.5MVA 33/0.415kV & 183.6MVA 16/330kV station service transformer and generator transformer. 1G10 - Shut down due to thrust bearing temperature problem.
	JEBBA HYDRO	6	2G1 - 5 5	475	450	2G1, 4 & 5 3	240	230	2G2 & 3 - Out on frequency management. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 - 4 4	600	600	411G1 - 4 4	600	235	411G1 - 4 - Generation reduced on frequency management
	EGBIN STEAM	5	ST1, 2, 4 & 5 4	880	567	ST1, 2, 4 & 5 4	540	446	ST3 - Out on high vibration since 19th June 2017. Generation reduced on frequency management
	SAPELE (STEAM)	6	ST2 1	120	50	ST2 1	50	50	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.
	DELTA (GAS)	18	GT9 - 13, 15, 16 & 18 - 20 10	615	615	GT9 - 13, 15, 18 & 20 7	314	314	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT7 - Out on fault. GT15, 16 & 19 - Out on frequency management. GT17 - Tripped on bearing vibration than maximum.
	AFAM IV & V (GAS)	8	GT18 1	75	50	GT18 1	50	50	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Out due to technical issues. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11 - 13 3	435	435	GT12 1	145	90	GT12 - Generation reduced on frequency management. GT11 & 13 - Out on frequency management.
	OMOTOSHO GAS	8	GT1 - 4, 6, 7 & 8 7	294	266	GT1, 6, 7 & 8 4	152	122.3	GT2, 3 & 4 - Out due to gas constraint. GT5 - Out on generator transformer trip.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 4, 5 & 8 4	152	130.5	GT2, 3 & 7 - Out due to gas constraint. GT6 - Out on frequency management. Generation reduced on frequency management.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT23 1	145	114	GT21 - Out on maintenance. GT22 - Out due to gas constraint. GT23 - Generation reduced on frequency management.
	SAPELE NIPP	4	GT1, 3 & 4 3	337.5	337.5	GT3 1	112.5	89.7	GT1 & 4 - Out on frequency management. GT2 - Out due to high air inlet differential pressure.
	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1 - Out on frequency management. GT2 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.
	OLORUNSOGO NIPP	6	GT1 - 3 3	375	360	0 0	0	0	GT1 & 3 - Out due to gas constraint. GT2 - Out on frequency management. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT2 1	120	91.3	GT1 - Out due to gas constraint. GT3 - Out due to oil leakage on the unit. GT4 - Out on frequency management.
	ODUKPANI NIPP	5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.
	IHOVBOR NIPP	4	GT1 & 2 2	225	225	GT2 1	101.8	101.8	GT1 - Out on frequency management. GT2 - On manual frequency adjustment. GT3 - Tripped on high vibration. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Out on frequency management.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	450	427	GT11, 12 & ST18 3	427	249	GT11, 12 & ST18 - Generation reduced on frequency management.
	AZURA - EDO	3	GT11 - 13 3	461	461	GT12 & 13 2	306	150	GT11 - Out on frequency management. GT12 & 13 - Generation reduced on frequency management.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	114	GT11, 12 & ST10 - Out due to gas constraint.
	IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	83.2	Available unit on bar.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2 & 5 3	75	60	GT2 & 5 2	42.4	42.4	GT1 - Out on frequency management. GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 Out on maintenance.
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1, 2 & 4 3	60	31.8	GT3 - Out on fault. Generation reduced on frequency management.
	RIVERS	1	GT1 1	180	160	GT1 1	160	25	GT1 - Generation reduced due to gas pressure.
	SUB TOTAL	131	84	8606	7975	50	4267.7	3045	Frequency = 50.49Hz.

1.7B GENERATION POSITION AT 06:00HRS OF FRIDAY 03/08/2018 FOR UNITS ON BILATERAL AGREEMENT

EGBIN	1	0	0	0	0	0	0	ST6 - Shut down on Egbin management decision.
		0						
PARAS ENERGY	8	GT2 - 9	64.9	64.9	GT2 - 9	64.9	64.9	Available units on bar.
		8			8			
SUB TOTAL	9	8	64.9	64.9	8	64.9	64.9	
GRAND TOTAL	140	92	8670.9	8039.9	58	4,332.60	3,109.90	Frequency = 50.49Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - THURSDAY 02/08/2018.							
EGBIN ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY							
FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK
OGBA	U-STEEL	2	0800HRS		24		NIL
	PTCEXPRESS	9	0900HRS		24		NIL
	SANKYO	ON	0100HRS		24		NIL
	FEEDER 8	9	1300HRS		24		NIL
IKORODU	PULK IT	3	1100HRS		19		PLANNED OUTAGE
	INDUSTRIAL	8	2000HRS		8		TRIPPED ON E/F
	SPINTEX	11	2100HRS		19		PLANNED OUTAGE
	DANGOTE	2	2200HRS		24		NIL
ALAUUSA	LAND CRAFT	14	2100HRS		24		NIL
	TR4 15MVA	6.9	1200HRS		19		PLANNED OUTAGE ON THE FEEDER
	TR5 -15MVA	5.5	1200HRS		19		PLANNED OUTAGE ON THE FEEDER
M/LAND	ALAUUSA	15.2	1600HRS		21		URGENT OUTAGE ON T3 60MVA AND ALAUUSA 33KV FEEDER
	PTC (MARYLAND)	17	1000HRS		24		NIL
	TOTAL LOAD	102.6					

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB OF THURSDAY 02/08/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	70.2	22:00	67.0	02:00	24	1646.4	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: THURSDAY 02/08/2018

COMPANY NAME	VOL-TAGE LEVEL	CON-TRACTUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY							24		ON SOAK
KAM STEEL	132kV line 2	15.0					24		SUPPLY NOT INTERRUPTED
ASAKA CEMENT		0					24		NIL
KAM INTEGRATED		15.0					24		SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS	33kV feeder	33					24		SUPPLY NOT INTERRUPTED
LORDSMITH		3					24		SUPPLY NOT INTERRUPTED

1.8 HYDROLOGICAL DATA: FRIDAY 03/08/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	132.27	101.41	370.05
TAIL WATER ELEVATION (METERS)	103.60	73.90	271.00
GROSS OPERATING HEAD (METERS)	28.67	27.51	99.05
AVERAGE TURBINE DISCHARGE (M3/SEC)	930.00	1368.00	467.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	930.00	1368.00	467.00
COMPUTED INFLOW (M3/SEC)	1569.00	1113.00	546.00
STORAGE DIFFERENTIAL	639.00	-255	79.00
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	388.50
MINIMUM LEVEL BELOW WHICH NO GENERATION	129	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT THURSDAY 02/08/2018

	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA					
EKO					
IKEJA					

2.0 GAS POSITION: FRIDAY 03/08/2018

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	446	1100		540	560
DELTA (GAS)	314	915		315	600
OMOTOSHO GAS	122.3	336.8		114	222.8
OMOTOSHO NIPP	91.3	500		120	380
OLORUNSOGO (GAS)	130.5	336		152	184
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	89.7	500		112.5	387.5
SAPELE STEAM	50	720		50	670
AFAM IV-V	50	300		50	250
AFAM VI	114	650		150	500
GEREGU GAS	90	435		145	290
GEREGU NIPP	114	435		145	290
ORPAT (GAS/STEAM)	249	480		427	53
ALAOJI NIPP	0	504		0	504
IHOVBOR NIPP	101.8	450		101.8	348.2
IBOM	83.2	198		115	83
ODUKPANI NIPP	0	625		0	625
TOTAL	2045.8	9234.80		2537.3	6697.5

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : THURSDAY 02/08/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF FRIDAY 03/08/2018 = 0MW. FREQUENCY Hz

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

4.0 UNAVAILABLE GENERATION CAPABILITY

The unavailable generation capability for Friday 03/08/2018 as at 0600Hrs was = 4379.7MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Alaoji NIPP GT2 & 4	240	0	240	1628
2	Omotosho NIPP GT1	120	0	120	
3	Geregu NIPP GT22	145	0	145	
4	Omotosho Gas GT2, 3 & 4	114	0	114	
5	Olorunsogo NIPP GT1 & 3	240	0	240	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Olorunsogo Gas GT2, 3 & 7	114	0	114	
8	Afam VI GT11, 12 & ST10	490	0	490	
9	Rivers IPP GT1	160	25	135	
				0	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1713.65MMSCF OF GAS (EQUIVALENT TO 6426.2MW) 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	Geregu Gas GT11 - 13	435	90	345	2551.7
2	Azura Edo GT11 - 13	461	150	311	
3	Shiroro 411G2	600	235	365	
4	Okpa GT11, 12 & ST18	427	249	178	
5	Delta GT15, 16 & 19	270	0	270	
6	Olorunsogo NIPP GT2	120	0	120	
7	Omotosho NIPP GT4	120	0	120	
8	Egbin ST1, 2, 4 & 5	540	446	94	
9	Olorunsogo gas GT1, 4, 5, 6 & 8	190	130.5	59.5	
10	Ihovbor NIPP GT1	112.5	0	112.5	
11	Jebba 2G2 & 3	160	0	160	
12	Sapele NIPP GT1 & 4	225	0	225	
13	Geregu NIPP GT23	145	114	31	
14	Omoku GT1	20	0	20	
15	Trans-Amadi GT1, 2 & 4	60	31.8	28.2	
16	Gbarain NIPP GT2	112.5	0	112.5	
Grand Total					4379.7

5.0 OUTAGES:

5(A) FORCED OUTAGES (GENERATION):-

- 1 01:33 - 20:24Hrs, Gbarain NIPP GT2 tripped on reverse power due to tripping of Alaoji/Owerri 132kV lines 1 & 2. LHR = 60MW.
- 2 12:05 - 16:57Hrs, Geregu Gas GT11 tripped on air inlet gas valve pressure. LHR = 97MW
- 3 12:05 through 24:00Hrs, Geregu Gas GT12 tripped on air inlet gas valve pressure. LHR = 97MW

5(B) FORCED OUTAGES (TRANSMISSION):-

- 1 01:33 - 01:54Hrs, Alaoji/Owerri 132kV lines 1 & 2 CB tripped at Alaoji T/S on the following relay indications:
Line 1: Optimho Relay – zone 3, B-N, DEF start, location = 278km, period = 179ms,
 Siemens Relay: instantaneous trip ie>> Yellow Phase, other relay – Back up protection trip. LHR = 8MW.
Line 2: Optimho Relay – DEF start, location = 251.9km, period = 80.5ms,
 Siemens Relay – instantaneous trip ie>> Yellow Phase, other relay – Back up protection. LHR = 8MW.
- 2 01:33 - 01:55Hrs, Owerri/Ahoada 132kV line CB tripped at Owerri T/S on DEF relay. LHR = 10.3MW.
- 3 01:33 - 02:01Hrs, Yenagoa T/S 95MVA 132/33kV transformer T1A primary CB tripped on E/F and backup protection relay. No load loss as the 33kV feeders on it were not on load at the time of tripping.
- 4 13:28 – 14:01Hrs, Uguwaji/Makurdi 330kV line 2 (cct UZA) CB tripped at Makurdi T/S on distance relay: RCs #902, OPZ1, OPAR fault location = A, RCS 931= tripped ABC. LHR = 264MW
- 5 13:27 – 13:50Hrs, New Haven/Nkalagu 132kV line 1 CB tripped at New Haven T/S on instantaneous O/C and lockout relay. LHR = 62MW
- 6 22:25 – 22:34Hrs, Jos/Gombe 330kV line (cct S1E) CB tripped at Jos T/S on over voltage. LHR = 195MW.

5(C) PLANNED OUTAGES:-

- 1 08:32 – 18:12Hrs, Mando/Jos 330kV line (cct M2S) was taken out to enable the maintenance crew continue with the replacement of defective isolators with new ones at Jos T/S. No load loss as the line was on soak.
- 2 11:46 – 13:32Hrs, Agbara/Ojo 132kV line 2 was taken out for maintenance crew to carry out annual preventive maintenance on the CB. No load interruption as line 1 was in service.
- 3 11:47 – 19:53Hrs, Ejigbo T/S 100MVA 132/33kV transformer T1 was taken out as additional apparatus for safe working space to enable maintenance crew connect the newly installed 100MVA 132/33kV transformer T2 to the Bus. Load loss = 23MW.
- 4 11:50 – 12:42Hrs, Ikeja West T/S 300MVA 330/132kV transformer T4 was taken out to allow maintenance crew connect 415V supply from the 500KVA grounding transformer of T4 to carry out oil filtration on the 75MX Reactor 2.

5(D) URGENT OUTAGES:-

- 1 12:11 - 19:17Hrs, Kainiji 1G5 was shut down due to excitation problem. Load loss = 65MW

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 ODUKPAI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSOGO POWER PLC AND OMOTOSHO POWER PLC.
- GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.
- GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.
- GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED FOR THE ANCILLARY SERVICE).
- GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).
- GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

10 COMMUNICATION MEDIA

STATIONS	NO INSTALLED	NO. WORKING
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5 (E) EMERGENCY OUTAGES:- Nil.

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- NIL

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

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

5 (I) 330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- cct B1T

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts J2H & S5B.

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

6 WEATHER REPORT:- Rainfall recorded at Katampe, Gwagwalada, Kano, Kaduna, New Haven & Osogbo.

7 INTERNATIONAL LINES:-

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

Maximum load - 265MW at 20:00Hrs.
 Minimum load - 198MW at 07:00Hrs.

B BIRNIN KEBBI/NAMEYI 132KV LINE

Maximum load - 104MW at 23:00Hrs.
 Minimum load - 79MW at 07:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 34.4MW at 20:00Hrs.
 Minimum load - 23.5MW at 04:00Hrs.

8 MISCELLANEOUS:-

- 1 00:14Hrs, Makurdi T/S 330kV 75MX Reactor R1 was switched into service on voltage control. Voltage profile: 343/326kV
- 2 01:15 - 10:02Hrs, Sapele Steam ST2 was shut down on frequency management. Load loss = 50MW.
- 3 01:18 - 12:46Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 53MW.
- 4 08:21Hrs of 01/08/2018, Makurdi T/S 330kV 75MX Reactor R1 was switched off on voltage control. Voltage profile: 302/321kV.
- 5 09:41 through 24:00Hrs, Azura-Edo GT11 was shut down on frequency management. Load loss = 75MW.
- 6 11:15Hrs, Akure T/S 60MVA 132/33kV transformer was energized on soak.
- 7 13:45 - 19:36Hrs, Jebba 2G4 was shut down on frequency management. Load loss = 66MW
- 8 16:47Hrs, Afam IV GT18 was tied. The unit was out on maintenance.
- 9 18:50Hrs, Omotosho Gas GT6 was tied. The unit was out on frequency management.
- 10 19:49Hrs, Delta GT20 was tied. The unit was out on frequency management.
- 11 20:21Hrs, Delta GT19 was tied. The unit was out on frequency management.
- 12 20:30Hrs, Olorunsogo NIPP GT2 was tied. The unit was out on gas constraint.

PLC/PAX	37	33
OPTIC FIBRE	13	10
PLS	14	2

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	11	8
132kV	102	82	20

12(A) **UNAVAILABLE TRANSFORMERS/REACTORS:**

SHIRORO REGION:

- 1 Birnin Kebbi 75MX Reactor R1.

ABUJA REGION

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

KADUNA REGION:

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

BAUCHI REGION:

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

ENUGU REGION:

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

LAGOS REGION:

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

PORT HARCOURT REGION

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

12 (B) **UNAVAILABLE BREAKERS/ISOLATORS**

LAGOS REGION:

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

BENIN REGION:

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

ENUGU REGION:

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

SHIRORO REGION

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

PORT HARCOURT REGION

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

- 13 21:01Hrs, Jos T/S 75MX 330kV Reactor R1 was switched off on voltage control. Voltage profile: 274/318kV.
 14 22:26Hrs, Jos T/S 75MX 330kV reactor R1 was placed in service for voltage control. Voltage profile: 362/338kV.
 15 23:13 through 24:00Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 56MW.
 16 23:34 through 24:00Hrs, Delta G19 was shut down on frequency management. Load loss = 65MW.
 17 23:39 through 24:00Hrs, Sapele NIPP GT1 was shut down on frequency management. Load loss = 63.9MW.
 **** 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 Benin, Ikeja West, Onitsha, Egbin, Uguwaji, Jos, Gwagwalada & Alaoji T/S.
FOR MORE INFORMATION: NCC Telephone Lines -
 a PAX 09/300, 309, 303 & 305.
 b NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
 c PLS - 622
 d GM (NCC) - 08036744641.
 e AGM (S/O) - 08056002757, CUG: 08129458475

