

TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja

From: General Manager, NCC, Osogbo

DAILY OPERATIONAL REPORT OF TUESDAY 09/01/2018

FOR: EVENTS OF MONDAY 08/01/2018

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	20,550	21:15	08/01/2018
GENERATION CAPABILITY	7859.4	-dc-	-dc-
UNITS ON BAR CAPABILITY AT PEAK	5782.9	-dc-	-dc-
PEAK GENERATION	4932.7	-dc-	-dc-
LOWEST GENERATION	72	21:30	08/1/2018
8-HOURLY DURATION PEAK	3875	0000-0800	-dc-
	4339.6	0900-1600	-dc-
	4932.7	1700-2400	-dc-
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	356	Birnin Kebbi T/S	24:00
LOWEST VOLTAGE FOR THE DAY	300	Kumbotso, Gombe & Sakete T/S	09:00, 05:00 & 21:00

1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75-50.25	
HIGHEST FREQUENCY	50.66	22:21
LOWEST FREQUENCY	47.27	21:26

1.4 SYSTEM COLLAPSE UP DATE

Date of last total collapse: 8 th Jan, 2018						No. of days since last total collapse: 01							
Date of last partial collapse: 17 th Oct, 2017						No. of days since last partial collapse: 81							
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	--	2	2	1	4	22
	Partial	1	--	--	1	1	3	4	4	3	2	--	20
2011	Total	--	--	--	--	4	3	1	1	1	2	1	13
	Partial	--	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	--	--	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	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	1	0	3				9
2018	Total	2											2
	Partial												

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

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN(MW)
1 KAINJI	HYDRO	369	0
2 JEBBA	HYDRO	347	0
3 SHIRORO	HYDRO	420	0
4 EGBIN ST2 - 5	STEAM	515	12
5 SAPELE	STEAM	0	0
6 DELTA	GAS	510	60
7 AFAM IV/V	GAS	62	0
8 GEREGU GAS	GAS	383	0
9 OMOTOSHO GAS	GAS	97.4	0
10 OLORUNSOGO GAS	GAS	169	0
11 GEREGU NIPP	GAS	202	0
12 SAPELE NIPP	GAS	180.3	0
13 ALAQJI NIPP	GAS	0	0
14 OLORUNSOGO NIPP	GAS	107.9	0
15 OMOTOSHO NIPP	GAS	101.5	0
16 ODUKPANI NIPP	GAS	289.6	0
17 IHOVBOR NIPP	GAS	95.1	0
18 OKPAI	GAS	284	0
19 AFAM VI	GAS	426	0
20 IBOM POWER	GAS	102.4	0
21 ASCO	GAS	0	0
22 A.E.S	GAS	0	0
23 OMOKU	GAS	62.1	0
24 TRANS AMADI	GAS	0	0
25 RIVERS IPP	(GAS)	140	0
26 AZURA - EDO IPP		0	0
27 EGBIN ST1	(GAS)	0	0
28 PARAS ENERGY	(GAS)	69.4	0
29 GBARAIN NIPP	GAS	0	0
TOTAL		4932.7	72

1.6 ENERGY GENERATED/ENERGY SENT OUT:

STATION	TURBINE	ENERGY GENERATED		ENERGY SENT OUT	
		MWH	MWH/H	MWH	MWH/H
1 KAINJI	HYDRO	8947.00	372.79	8932.70	372.20
2 JEBBA	HYDRO	1851.00	77.13	1841.36	76.72
3 SHIRORO	HYDRO	5634.00	234.75	5607.77	233.66
4 EGBIN ST2 - 5	STEAM	4256.00	177.33	4035.50	168.15
5 SAPELE	STEAM	0.00	0.00	0.00	0.00
6 DELTA	GAS	10871.86	452.99	10758.80	448.28
7 AFAM IV/V	GAS	136.00	56.96	1363.04	56.79
8 GEREGU GAS	GAS	7941.30	330.89	7911.96	329.67
9 OMOTOSHO GAS	GAS	1542.00	64.25	1523.50	63.48
10 OLORUNSOGO GAS	GAS	3131.72	130.49	3106.03	129.42
11 GEREGU NIPP	GAS	4353.25	181.39	4335.58	180.65
12 SAPELE NIPP	GAS	3629.80	159.58	3612.40	158.85
13 AZURA - EDO IPP	GAS	0.00	0.00	0.00	0.00
14 ALAQJI NIPP	GAS	0.00	0.00	0.00	0.00
15 OLORUNSOGO NIPP	GAS	2363.00	98.46	2304.50	96.02
16 OMOTOSHO NIPP	GAS	2124.70	88.53	2112.30	88.01
17 ODUKPANI NIPP	GAS	6149.73	256.24	6118.95	254.96
18 IHOVBOR NIPP	GAS	2080.25	86.68	2068.02	86.17
19 OKPAI	GAS	5197.00	216.54	5038.60	209.94
20 AFAM VI	GAS	7217.53	300.73	6984.00	291.00
21 IBOM	GAS	1917.40	79.89	1910.00	79.58
22 ASCO	GAS	0.00	0.00	0.00	0.00
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1329.50	55.40	1301.69	54.24
25 TRANS AMADI	GAS	0.00	0.00	0.00	0.00
26 RIVERS IPP	GAS	572.44	23.85	568.20	23.68
27 EGBIN ST1	STEAM	2372.00	98.83	2250.00	93.75
28 PARAS ENERGY	GAS	1446.70	60.28	1443.10	60.13
29 GBARAIN NIPP	GAS	1301.50	54.23	1289.60	53.73
TOTAL		87,796.68	3,658.20	86,617.60	3,609.07

1.7A

GENERATION POSITION AT 06:00HRS OF TUESDAY 09/01/2018

	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)	REMARKS
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 6,11 & 12 4	440	440	1G5, 6, 11 & 12 4	440	375	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.
	JEBBA HYDRO	6	2G1 & 5 2	190	190	2G1 & 5 2	190	168	2G2 - 3 - Tripped due to loss of auxiliary supply. 2G6 - Out due to burnt generator winding and AVR.
	SHIRORO HYDRO	4	411G1 & 3 2	290	290	411G1 & 3 2	290	277	411G2 - Tripped and the load itself to zero. 411G4 - Out due to radiator problem.
	EGBIN STEAM	5	ST4 & 5 2	440	440	ST4 1	220	176	ST1 - Tripped on generator CB trouble. ST2 - Out on undisclosed fault. ST3 - Tripped on high vibration. ST5 - Out due to gas constraint.
	SAPELE (STEAM)	6	0 0	0	0	0 0	0	0	ST1 - Tripped on low drum level. ST2 - Out on maintenance. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Tripped on gas control valve not following reference point.
	DELTA (GAS)	18	GT4, 7, 9-13, 15, & 20 9	355	355	GT4, 7, 9 - 13, 15, & 20 9	355	333	GT3 & 5 - Out due to generator winding fault. GT6 & 14 - Out on major overhaul. GT8 & 18 - Out on maintenance. GT16 & 19 - Out to replace dirty filter. GT17 - Out on excitation trouble.
	AFAM IV & V (GAS)	8	GT18 1	75	63	GT18 1	63	63	GT1 - 12 - De-commissioned and scrapped. GT13-16 - Out on blade failure. GT17 - Tripped on loss of excitation. GT19 & 20 - Awaiting major overhaul.
	GEREGU GAS	3	GT11, 12 & 13 3	435	435	GT11, 12 & 13 3	435	384	Available units on bar.
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2 & 5 3	114	111.1	GT3, 4 & 6 - 8 - Out due to gas constraint.
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT2, 4 & 5 3	114	106.8	GT1, 3 & 6 - 8 - Out due to gas constraint.
NIPP	GEREGU NIPP	3	GT22 & 23 2	290	290	GT22 & 23 2	290	185	GT21 - Out on maintenance. GT22 - Generation reduced due to gas constraint.
	SAPELE NIPP	4	GT1 & 2 2	225	225	GT1 & 2 2	225	125.2	GT3 - Out on undisclosed fault. GT4 - Tripped on fire protection alarm.
	ALAOJI NIPP GAS	4	GT1 & 2 2	250	240	0 0	0	0	GT1 & 2 - Tripped due to low gas pressure. GT3 - Shut down due to generator air inlet filter trouble. GT4 - Out on maintenance.
	OLORUNSOGO NIPP GAS	6	GT1 - 3 3	360	360	GT2 1	120	111.1	GT1 & 3 - Out due to gas constraint. GT4 - Out of production since 25/10/2016. ST13 & ST23 - Out on maintenance.
	OMOTOSHO NIPP GAS	4	GT1, 2 & 4 3	375	360	GT1 1	120	97.8	GT2 & 4 - Out due to gas constraint. GT3 - Shut down due to oil leakage on the unit.
	ODUKPANI NIPP	5	GT1, 3 & 5 3	360	345	GT1, 3 & 5 3	345	340.3	GT2 - Out due to control system problem. GT4 - Shut down to avoid fire outbreak.
	IHOVBOR NIPP	4	GT1 - 3 3	337.5	337.5	GT2 1	112.5	82.4	GT1 & 3 - Out due to gas constraint. GT4 - Out on maintenance.
	GBARAIN NIPP GAS	1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Shut down due to low gas pressure.
IPP	OKPAI GAS/STEAM	3	GT11, 12 & ST18 3	375	375	GT11, 12 & ST18 3	375	243	GT11 - Generation reduced on frequency management. GT12 - Generation reduced due to air inlet differential pressure.
	AZURA - EDO	0	0 0	0	0	0 0	0	0	GT11 - Undergoing commissioning tests. GT12 & 13 - Awaiting commissioning.
	AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	650	GT11 - 13 3	450	348	GT13 - Generation reduced on frequency management. ST10 - Out on frequency management.
	IBOM POWER GAS	3	GT13 1	115	115	GT13 1	115	104	GT1 & 2 - Out on fault.
	AES	0	0	0	0	0	0	0	Out of production since 27/09/2014.
	ASCO	0	0	0	0	0	0	0	GT1 - Shut down due to leakage in the furnace.
	OMOKU GAS	6	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	60.6	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. Generation reduced due to gas constraint.
	TRANS-AMADI	4	0 0	0	0	0 0	0	0	GT1 & 4 - Station shut down due to fatal accident on 1st January 2018.
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out on maintenance.
	SUB TOTAL	126	70	6447	6311	49	4453.5	3691.3	Frequency = 50.40Hz.

1.7B GENERATION POSITION AT 06:00HRS OF TUESDAY 09/01/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDERS NAME	MAX. LOAD (MW)	ST6		ST6		220	204	Available unit on bar.
		1	220	220	1			
EGBIN	1	1	220	220	1	220	204	Available unit on bar.
PARAS ENERGY	8	GT2 - 9	68.6	68.6	GT2 - 9	68.6	68.6	Available units on bar.
		8			8			
SUB TOTAL	9	9	288.6	288.6	9	288.6	272.6	
GRAND TOTAL	135	79	6735.6	6599.6	58	4,742.10	3,963.90	Frequency = 50.40Hz.

NB: Observation shows that many stations remove their units from frequency response at 06:00Hrs without instruction from NCC.

1.7C BILATERAL AGREEMENT UNITS DISPATCH - MONDAY 08/01/2018

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	REMARK	
Egbin ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY					
OGBA	U-STEEL	1	1000HRS	22	SYSTEM OUTAGE
	PTCEXPRESS	5	0300HRS	12	TRIP INST O/C R-PHASE & SYSTEM OUTAGE
	SANKYO	ON	0100HRS	22	SYSTEM OUTAGE
	FEEDER 8	15	1700HRS	22	SYSTEM OUTAGE
IKORODU	PULK IT	1	0800HRS	22	SYSTEM COLLAPSE
	INDUSTRIAL	17	0800HRS	22	SYSTEM COLLAPSE
	SPINTEX	3	1600HRS	22	SYSTEM COLLAPSE
	DANGOTE	3	1600HRS	22	SYSTEM COLLAPSE
	LAND CRAFT	44	2100HRS	22	SYSTEM COLLAPSE
ALAUSA	TR4 -15MVA	7.5	1300HRS	22	SYSTEM COLLAPSE
	TR5 -15MVA	5.5	1000HRS	22	SYSTEM COLLAPSE
	ALAUUSA	16.6	1400HRS	22	SYSTEM COLLAPSE
MILAND	PTC (MARYLAND)	14	1400HRS	22	SYSTEM COLLAPSE
	TOTAL LOAD	132.6			

BILATERAL AGREEMENT LOAD DISPATCH
60MW PARAS ENERGY GENERATION TO CEB

FEEDER	MAX	TIME	HOURS IN SERVICE	REMARK
Ikeja West/Sakete 330kV line	70.2	06:00	21	Out due to system collapse.

1.8 HYDROLOGICAL DATA: TUESDAY 09/01/2018

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	141.59	102.75	374.48
TAIL WATER ELEVATION (METERS)	104.60	72.40	270.50
GROSS OPERATING HEAD (METERS)	36.99	30.35	103.98
AVERAGE TURBINE DISCHARGE (M3/SEC)	993.00	343.00	272.00
AVERAGE SPILLAGE (M3/SEC)	117.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	1110	343	272
COMPUTED INFLOW (M3/SEC)	1242.00	1315.00	13.00
STORAGE DIFFERENTIAL	132.00	972	-259
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	362.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	130	99	355

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT MONDAY 08/01/2018

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	466.30	14:00	540.76	56.9	23:00
EKO	458.9	14:00	617.24	35.2	0:00
IKEJA	531.0	21:00	805.3	311.1	03:00

2.0 GAS POSITION: TUESDAY 09/01/2018

STATION	SIGNED ACO 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	12		1100		440	660
DELTA (GAS)	532		915		355	560
OMOTOSHO GAS	75.4		336.8		114	222.8
OMOTOSHO NIPP	100.6		500		120	380
OLORUNSOGO (GAS)	133.9		338		114	222
OLORUNSOGO NIPP	109.7		750		630	120
SAPELE NIPP	172.6		500		225	275
SAPELE STEAM	0		720		0	720
AFAM IV-V	64		300		63	237
AFAM VI	248		650		450	200
GEREGU GAS	391		435		435	0
GEREGU NIPP	204		435		290	145
ORPAI (GAS/STEAM)	240		480		375	105
ALAQJI NIPP	0		504		0	504
IHOVBOR NIPP	96.8		450		112.5	337.5
IBOM	85.5		198		115	83
ODUKPANI NIPP	293.8		625		345	280
TOTAL	2759.3		9235.38		3673.5	5561.3

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : MONDAY 08/01/2018

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF TUESDAY 09/01/2018 0MW. FREQUENCY 50.40Hz

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
		GT1	0		
5	Omotosho NIPP	GT2	40	0	0
		GT3		0	
		GT4		0	
TOTAL (MW)			295	0	0

4.0 UNUTILIZED GENERATION CAPABILITY

The unutilized generation capability for Tuesday 09/01/2018 as at 0600Hrs was = 2144.4MW.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNUTILIZED GENERATION CAPABILITY (MW)	SUB-TOTAL
4.1 DUE TO GAS CONSTRAINTS:					
1	Ihovbor GT1 & 3	225	0	225	1849.4
2	Alaqji NIPP GT1 & 2	240	0	240	
3	Omotosho Gas GT3, 4 & 6 - 8	190	0	190	
4	Olorunsogo Gas GT1, 3 & 6 - 8	190	0	190	
5	Omoku GT1, 2, 5 & 6	80	60.6	19.4	
6	Olorunsogo NIPP GT1 & 3	240	0	240	
7	Egbin ST2 & 5	440	0	440	
8	Omotosho NIPP GT2 & 4	240	0	240	
9	Geregu NIPP GT22	145	80	65	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL 1483.01MSCF OF GAS (EQUIVALENT TO 5561.3MW) WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
4.2 DUE TO LINE CONSTRAINTS					
				0	0
				0	
4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND					
1	Alfam VI, ST10 & GT 13	350	80	270	295
2	Okpai GT11	150	125	25	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
				0	
4.4 DUE TO WATER MANAGEMENT					
				0	0
				0	
Total					2144.4

5.0 **OUTAGES:-**

5 (A) **FORCED OUTAGES (GENERATION):-**

- 1 09:32Hrs, Omoku GTs 1, 2, 5 & 6 tripped on reverse power due to the tripping of Alaoji/Afam/IPP/port Harcourt 132kV line 2. Total LHR = 62.4MW
10:14Hrs, GT2 was tied. 10:16Hrs, GT1 was tied and 10:17Hrs, GTs 5 & 6 were tied respectively.

5 (B) **FORCED OUTAGES (TRANSMISSION):-**

- 1 09:15 - 09:48Hrs, Alaoji/Owerri 132kV line 2 CBs tripped at both ends without relay indications: LHR = 18MW
- 2 09:32 - 09:49Hrs, Alaoji/Afam/IPP/Port Harcourt 132kV line 2 CB tripped at both ends on the following relay indications:
At Alaoji T/S:
Trip Relay, TR1A, TR2A lock out SOTF. LHR = 22MW
At Afam T/S: O/C Red Yellow & Blue phases. LHR = 22MW
- 3 17:50 - 18:17Hrs, Alaoji/Afam/IPP/Port Harcourt 132kV line 2 tripped at Alaoji T/S on the following relay indications.
Ohmega Main 1 Relay: SOTF
Ohmega Main 2 Relay: SOTF
Micom Relay: I-L3. LHR = 24MW
- 4 17:50 - 18:15Hrs, Alaoji/Owerri 132kV line 2 tripped at Alaoji T/S without relay indication. LHR = 46MW
- 5 17:50 - 18:18Hrs, Alaoji/Owerri 132kV line 1 tripped at Owerri T/S on directional O/C relay. LHR = 46MW
- 6 19:41 - 19:48Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line tripped at Ayede T/S on Siemens back up relay: O/C Red & Blue phases. LHR = 75MW

SYSTEM COLLAPSE REPORT OF 08/01/2018 AT 21:25HRS

OBSERVATION FROM NCC CONTROL DESK

System frequency sharply dropped from 50.31Hz to 47.27Hz and resulted in system collapse. Total load loss was 4915.7MW.
REPORT FROM THE STATIONS.

21:25Hrs, Shiroro/Abuja 330kV line (cct R4B) CBs tripped at both ends on the following relay indications:

At Shiroro T/S:

ABB Relay: General trip, start Z<R, start Z<Y, start Z<B and start Z<E. LHR = 332.5MW

At Katampe T/S: Without relay indication.

21:25Hrs, Shiroro/Gwagwalada 330kV line (cct R5G) CBs tripped at both ends on the following relay indications:

At Shiroro T/S:

ABB Relay: General trip, start <R, start <Y, start <B, start <E, trip Z<zone 3, lock out trip and auto reclosure blocked. LHR = 294.5MW

At Gwagwalada T/S: Without relay indication.

21:26Hrs, Jebba 2G1, 2, 4 & 5 tripped on the following relay indications:

Jebba 2G1: Emergency shut down 86-1, emergency 86-2 generator O/C backup protection, suitable for degenerative static excitation 50-27. LHR = 90MW

Jebba 2G2: Temperature shut down 86-5, generator O/C backup protection, suitable for generative static excitation 50-27. LHR = 80MW

Jebba 2G4: Temperature shut down 86-5. LHR = 80MW

Jebba 2G5: Emergency shut down 86-1, emergency 86-2 generator O/C backup protection, suitable for degenerative static excitation 50-27. LHR = 87MW

21:26Hrs, Jebba G/S/Jebba T/S 330kV line 1 (cct B8J) CB tripped at Jebba G/S on PLS-STF NL1 PLS-STF NL2, PSD start.

RESTORATION

21:29Hrs, Delta GT16 was tied

21:31Hrs, Shiroro P/S was instructed to start a unit and feed Abuja.

21:37Hrs, Delta GT13 was tied.

21:38Hrs, Delta GT19 was tied.

21:42Hrs, cct G3B was restored

21:44Hrs, cct R4B was restored

21:45Hrs, ccts H7V and V7B were restored

RESTORATION CONTINUES

5 (C) **PLANNED OUTAGES:-**

5 (E) **EMERGENCY OUTAGES:-** Nil.

5 (F) **AUTOMATIC UNDER FREQUENCY OPERATION:-**

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A1S, U1A, D2K & K4U.

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:-** cct N4J (on soak at Egbin T/S)

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

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** cct S5B

6 **WEATHER REPORT:-** NIL

7 **INTERNATIONAL LINES:-**

5(D) URGENT OUTAGES:

1 13:59Hrs, Gbarain NIPP GT2 was shut down due to low gas pressure. Load loss = 43MW

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 2 - OTHER 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 CONTACTED 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.

GROUP 7 - ALL OTHER PLANTS.

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

Maximum load - 236MW at 21:00Hrs.

Minimum load - 92MW at 24:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 86MW at 20:00Hrs.

Minimum load - 20.0MW at 24:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 28.1MW at 20:00Hrs.

Minimum load - 8MW at 24:00Hrs.

8 MISCELLANEOUS:-

1 00:59Hrs, Afam V1 P/S GT11 was shut down on frequency management. Load loss = 127MW

2 05:30Hrs, Egbin ST6 was tied. The unit was out due to fire outbreak on gas pipeline.

3 05:39Hrs, Egbin ST2 was tied. The unit was out on gas constraint.

4 08:32Hrs, Kairiji/Jebba 330kV line 2 (cct K2J) was restored

5 10:29Hrs, Egbin P/S ST4 was tied. The unit was out on gas constraint.

6 10:33Hrs, Egbin/Oke-Aro 330kV line 2 (cct N8K) was restored

7 11:34Hrs, Olorunsogo GT6 was tied. The unit was out on gas constraint.

10 SYSTEM BLACK START CAPABILITY

Delta, Shiroro & Egbin - Available.

- 8 11:53Hrs, Ikeja-West T/S 330kV 75MX Reactor R1 was switched off on voltage control. V/P = 308/313kV
- 9 13:02Hrs, Jebba 2G4 was tied. The unit tripped due to loss of auxiliary supply.
- 10 13:30Hrs, Jebba 2G1 was tied. The unit tripped due to loss of auxiliary supply.
- 11 14:31 - 17:58Hrs of 07/01/2018 Kumbotso T/S 30MVA 132/33kV transformer TR1 was taken out to enable maintenance crew rectify the cause of the differential tripping on the transformer. No load interruption as transformer was on soak.
- 12 17:01Hrs, Rivers IPP GT1 was tied. The unit was out on maintenance.
- 13 17:40Hrs, Job was suspended on Ajah T/S 60MVA 132/33kV transformer T12 due to grounding transformer that failed test.
- 14 19:10Hrs, Jebba 2G5 was tied. The unit was out due to loss of station auxiliary.
- 15 19:13Hrs, Jebba 2G2 was tied. The unit was out due to loss of station auxiliary.
- 16 19:21Hrs, Shiroro P/S increased generation by 100MW. Frequency was 50.21Hz.
- 17 19:25Hrs, Mando T/S 330kV 75MX Reactor 3R2 was switched off on voltage control. V/P = 315/321kV
- 18 20:10Hrs, Benin T/S 330kV 75MX Reactor 6R2 was switched off on voltage control. V/P = 330/333kV
- 19 20:40Hrs, Okpai P/S increased generation by 50MW. Frequency was 50.26Hz
- 20 21:42Hrs of 07/01/2018 through 24:00Hrs, Jebba P/S 2G3 tripped on Emergency shut down 86-1 & 86-2, head gate shut down 86-3, 2 step reverse power, power tripped protection 87/UST-unit service transformer differential and Harmonic restrain. 50/27 generator O/C back up protection suitable for regeneration static excitation 64/9/G generator stator ground fault. LHR = 70MW
- 21 21:42Hrs of 07/01/2018 through 24:00Hrs, Jebba P/S 2G5 tripped on rapid shut down, 86-4, emergency shut down 86-1, emergency shut down 86-2. Two step reverse power protection, integrator 87/USB unit transformer differential protection and Harmonic restrain. LHR = 70MW
- 22 21:19Hrs, Afam VI GT11 was tied.
- 23 21:52Hrs, Jebba P/S 2G2 was shut down due to lost of station supply. Load loss = 70MW
- 24 21:52Hrs, Jebba P/S 2G4 was shut down due to lost of station supply. Load loss = 70MW
- 25 23:27Hrs, cct B11J was taken out on voltage control. V/P = 348/343kV
- 26 **LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.**

11 (A) COMMUNICATION MEDIA

STATIONS	NO. INSTALLED	NO. WORKING
PLC/PAX	37	33
OPTIC FIBRE	13	10
PLS	14	5

11 (B) SCADA RTU STATUS

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	7	12
132kV	102	84	18

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

- 1 Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.
- 2 Birnin Kebbi 75MX Reactor R1.

KADUNA REGION:

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

12(D) LAGOS REGION

- 1 Agbara/Ojo 132kV line 1 on soak from Agbara end.

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.

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.

OSOGBO REGION:

- 1 Omotosho 330kV T/S, 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. NIL

- 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/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 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

