

# TRANSMISSION COMPANY OF NIGERIA

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

**DAILY OPERATIONAL REPORT OF MONDAY 06/08/2018**

**FOR: EVENTS OF SUNDAY 05/08/2018**

**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     | 05/08/2018 |
| GENERATION CAPABILITY                              | 8047.6     | -do-      | -do-       |
| UNITS ON BAR CAPABILITY AT PEAK                    | 5094.1     | -do-      | -do-       |
| PEAK GENERATION                                    | 4413.0     | -do-      | -do-       |
| LOWEST GENERATION                                  | 3147.2     | 11:00     | 05/08/2018 |
| 8-HOURLY DURATION PEAK                             | 3864       | 0100-0800 | -do-       |
|  | 3661.9     | 0900-1600 | -do-       |
|  | 4413       | 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 | 347           | Jos, Makurdi & Omosho T/S | 02:00, 04:00 & 06:00 |
| LOWEST VOLTAGE FOR THE DAY  | 292           | Makurdi T/S               | 21:00                |

**1.3 FREQUENCY RANGE**

| DETAILS           | HZ            | HRS   |
|-------------------|---------------|-------|
| NOMINAL FREQUENCY | 50            |       |
| STATUTORY LIMITS  | 49.75 - 50.25 |       |
| HIGHEST FREQUENCY | 50.78         | 04:03 |
| LOWEST FREQUENCY  | 50.17         | 18:28 |

**1.4 SYSTEM COLLAPSE UP DATE**

|  |  |
|--|--|
| Date of last total collapse: 8th July, 2018                      | No. of days since last total collapse: 19                          |
| Date of last partial collapse: 12 <sup>th</sup> April, 2018      | No. of days since last partial collapse: 111                       |
| 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   | 3   | 4   | 4   | 3    | 2   | --  | 1   | 20    |
| 2011 | Total   | --   | --   | --  | --  | 4   | 3   | 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   | 0   | 3   | 1   | 0    | 0   | 1   | 0   | 9     |
|      | Partial |      |      | 0   | 0   | 1   | 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   | 270              | 218               |                  |                 |
| 2 JEBBA                                      | HYDRO   | 394              | 226               |                  |                 |
| 3 SHIRORO                                    | HYDRO   | 429              | 174               |                  |                 |
| 4 EGBIN ST2 - 5                              | STEAM   | 571              | 445               |                  |                 |
| 5 SAPELE                                     | STEAM   | 34               | 0                 |                  |                 |
| 6 DELTA                                      | GAS     | 392              | 279               |                  |                 |
| 7 AFAM IV-V                                  | GAS     | 70               | 0                 |                  |                 |
| 8 GEREGU GAS                                 | GAS     | 127              | 77                |                  |                 |
| 9 OMOTOSHO GAS                               | GAS     | 169.7            | 111               |                  |                 |
| 10 OLORUNSOGO GAS                            | GAS     | 171.7            | 142.2             |                  |                 |
| 11 GEREGU NIPP                               | GAS     | 120              | 73                |                  |                 |
| 12 SAPELE NIPP                               | GAS     | 81.6             | 86.6              |                  |                 |
| 13 ALAOJI NIPP                               | GAS     | 84.4             | 78.5              |                  |                 |
| 14 OLORUNSOGO NIPP                           | GAS     | 114.1            | 76.4              |                  |                 |
| 15 OMOTOSHO NIPP                             | GAS     | 97.1             | 94.9              |                  |                 |
| 16 ODUKPANI NIPP                             | GAS     | 0                | 0                 |                  |                 |
| 17 IHOVBOR NIPP                              | GAS     | 102.5            | 100.2             |                  |                 |
| 18 OKPAI                                     | GAS     | 269              | 269               |                  |                 |
| 19 AFAM VI                                   | GAS     | 233              | 120               |                  |                 |
| 20 IBOM POWER                                | GAS     | 70.3             | 80.3              |                  |                 |
| 21 ASCO                                      | GAS     | 0                | 0                 |                  |                 |
| 22 A.E.S                                     | GAS     | 0                | 0                 |                  |                 |
| 23 OMOKU                                     | GAS     | 54.9             | 56.5              |                  |                 |
| 24 TRANS AMADI                               | GAS     | 64               | 65.2              |                  |                 |
| 25 RIVERS IPP                                | (GAS)   | 90               | 90                |                  |                 |
| 26 AZURA - EDO IPP                           | (GAS)   | 250              | 150               |                  |                 |
| 27 EGBIN ST6                                 | (GAS)   | 0                | 0                 |                  |                 |
| 28 PARAS ENERGY                              | (GAS)   | 68.6             | 69.4              |                  |                 |
| 29 GBARAIN NIPP                              | GAS     | 85.1             | 65                |                  |                 |
| <b>TOTAL</b>                                 |         | <b>4413</b>      | <b>3147.2</b>     |                  |                 |
| <b>1.6 ENERGY GENERATED/ENERGY SENT OUT:</b> |         |                  |                   |                  |                 |
| STATION                                      | TURBINE | ENERGY GENERATED |                   | ENERGY SENT OUT  |                 |
|  |         | MWH              | MWH/H             | MWH              | MWH/H           |
| 1 KAINJI                                     | HYDRO   | 5650.00          | 235.42            | 5635.60          | 234.82          |
| 2 JEBBA                                      | HYDRO   | 6687.00          | 278.63            | 6664.36          | 277.68          |
| 3 SHIRORO                                    | HYDRO   | 7218.00          | 300.75            | 7192.21          | 299.68          |
| 4 EGBIN ST2 - 5                              | STEAM   | 11250.00         | 468.75            | 10656.40         | 444.02          |
| 5 SAPELE                                     | STEAM   | 140.40           | 5.85              | 73.00            | 3.04            |
| 6 DELTA                                      | GAS     | 10300.93         | 429.21            | 10148.70         | 422.86          |
| 7 AFAM IV-V                                  | GAS     | 306.00           | 12.75             | 302.26           | 12.59           |
| 8 GEREGU GAS                                 | GAS     | 2856.10          | 119.00            | 2834.37          | 118.10          |
| 9 OMOTOSHO GAS                               | GAS     | 3463.00          | 144.29            | 3435.40          | 143.14          |
| 10 OLORUNSOGO GAS                            | GAS     | 3567.88          | 148.66            | 3538.66          | 147.44          |
| 11 GEREGU NIPP                               | GAS     | 2740.24          | 114.18            | 2726.96          | 113.62          |
| 12 SAPELE NIPP                               | GAS     | 2294.88          | 95.62             | 2276.86          | 94.87           |
| 13 ALAOJI NIPP                               | GAS     | 1960.56          | 81.69             | 1940.14          | 80.84           |
| 14 OLORUNSOGO NIPP                           | GAS     | 2577.80          | 107.41            | 2535.50          | 105.65          |
| 15 OMOTOSHO NIPP                             | GAS     | 2264.70          | 94.36             | 2245.80          | 93.58           |
| 16 ODUKPANI NIPP                             | GAS     | 0.00             | 0.00              | 0.00             | 0.00            |
| 17 IHOVBOR NIPP                              | GAS     | 2257.12          | 94.05             | 2238.62          | 93.28           |
| 18 OKPAI                                     | GAS     | 6442.00          | 268.42            | 6271.10          | 261.30          |
| 19 AFAM VI                                   | GAS     | 3298.77          | 137.45            | 3253.30          | 135.55          |
| 20 IBOM                                      | GAS     | 1758.08          | 73.25             | 1750.00          | 72.92           |
| 21 ASCO                                      | GAS     | 0.00             | 0.00              | 0.00             | 0.00            |
| 22 AZURA - EDO IPP                           | GAS     | 4442.70          | 185.11            | 4430.20          | 184.59          |
| 23 A.E.S                                     | GAS     | 0.00             | 0.00              | 0.00             | 0.00            |
| 24 OMOKU                                     | GAS     | 1284.90          | 53.54             | 1252.50          | 52.19           |
| 25 TRANS AMADI                               | GAS     | 1454.00          | 60.58             | 1422.70          | 59.28           |
| 26 RIVERS IPP                                | GAS     | 2458.80          | 102.45            | 2452.85          | 102.20          |
| 27 EGBIN ST6                                 | STEAM   | 0.00             | 0.00              | 0.00             | 0.00            |
| 28 PARAS ENERGY                              | GAS     | 1660.40          | 69.18             | 1655.90          | 69.00           |
| 29 GBARAIN NIPP                              | GAS     | 1861.90          | 77.58             | 1845.20          | 76.88           |
| <b>TOTAL</b>                                 |         | <b>90,196.16</b> | <b>3,758.17</b>   | <b>88,778.59</b> | <b>3,699.11</b> |

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

|                      | 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 50.35Hz. | REMARKS  |
|----------------------|-------------------|-----------------------|----------------------------------|---|--|------------------------|---------------------------------|---|--|
| PRIVATISED COMPANIES | KAINJI HYDRO      | 8                     | 1G5, 6, 11 & 12<br>4             | 440                                       | 440  | 1G5, 6, 11 & 12<br>4   | 288                             | 255                                     | 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. Generation reduced due to low gross operating head. |
|                      | JEBBA HYDRO       | 6                     | 2G1 - 5<br>5                     | 475                                       | 450  | 2G1 & 5<br>2           | 180                             | 178                                     | 2G2 - 4 - Out on frequency management. 2G6 - Out due to burnt generator winding and AVR.   |
|                      | SHIRORO HYDRO     | 4                     | 411G1 - 4<br>4                   | 600                                       | 600  | 411G1 & 4<br>2         | 300                             | 105                                     | 411G1 & 4 - Generation reduced on frequency management. 411G2 & 3 - Out on frequency management.   |
|                      | EGBIN STEAM       | 5                     | ST1, 2, 4 & 5<br>4               | 880                                       | 572  | ST1, 2, 4 & 5<br>4     | 572                             | 469                                     | ST3 - Out on high vibration since 19th June 2017. Generation reduced on frequency management.  |
|                      | SAPELE (STEAM)    | 6                     | ST2<br>1                         | 120                                       | 44   | ST2<br>1               | 44                              | 44                                      | 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<br>10 | 615                                       | 615  | GT9 - 13, 15 & 18<br>7 | 315                             | 308                                     | 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. GT16, 19 & 20 - Out on frequency management. GT17 - Tripped on bearing vibration than maximum.   |
|                      | AFAM IV & V (GAS) | 8                     | GT18<br>1                        | 75  | 63   | GT18<br>1              | 63                              | 63                                      | 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<br>3                   | 435                                       | 435  | GT11<br>1              | 145                             | 53                                      | GT11 - Generation reduced due to gas constraint. GT12 & 13 - Out on gas constraint.  |
|                      | OMOTOSHO GAS      | 8                     | GT1 - 8<br>8                     | 336                                       | 304  | GT1, 6 - 8<br>4        | 140.6                           | 140.6                                   | GT2 - 4 - Out due to gas constraint. GT5 - Out on frequency management.  |
|                      | OLORUNSOGO GAS    | 8                     | GT1 - 8<br>8                     | 336                                       | 304  | GT1, 2, 4 & 5<br>4     | 140                             | 136.8                                   | GT3, 6 & 7 - Out due to gas constraint. GT8 - Out on frequency management.   |
| NIPP                 | GEREGU NIPP       | 3                     | GT22 & 23<br>2                   | 290                                       | 290  | GT23<br>1              | 145                             | 64                                      | GT21 - Out on maintenance. GT22 - Out due to gas constraint. GT23 - Generation reduced due to gas constraint.  |
|                      | SAPELE NIPP       | 4                     | GT1, 3 & 4<br>3                  | 337.5                                     | 337.5  | GT3<br>1               | 112.5                           | 81                                      | GT1 & 4 - Out on frequency management. GT2 - Out due to high air inlet differential pressure.  |
|                      | ALAOJI NIPP GAS   | 4                     | GT1, 2 & 4<br>3                  | 375                                       | 360  | GT2<br>1               | 86                              | 86                                      | GT1 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.   |
|                      | OLORUNSOGO NIPP   | 6                     | GT1 - 3<br>3                     | 375                                       | 360  | GT1<br>1               | 112.6                           | 112.6                                   | GT2 & 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.  |
|                      | OMOTOSHO NIPP GAS | 4                     | GT1, 2 & 4<br>3                  | 375                                       | 360  | GT2<br>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<br>2                     | 240                                       | 230  | 0<br>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<br>2                     | 225                                       | 225  | GT2<br>1               | 80.5                            | 80.5                                    | GT1 - Out on frequency management. GT2 - On manual frequency adjustment. GT3 - Tripped on high vibration. GT4 - Out on maintenance.  |
|                      | GBARAIN NIPP GAS  | 1                     | GT2<br>1                         | 112.5                                     | 112.5  | GT2<br>1               | 112.5                           | 78.5                                    | GT2 - Generation reduced on frequency management.  |
| IPP                  | OKPAI GAS/STEAM   | 3                     | GT11, 12 & ST18<br>3             | 450                                       | 427  | GT11, 12 & ST18<br>3   | 427                             | 269                                     | GT11, 12 & ST18 - Generation reduced on frequency management.  |
|                      | AZURA - EDO       | 3                     | GT11 - 13<br>3                   | 461                                       | 461  | GT12 & 13<br>2         | 306                             | 150                                     | GT11 - Out on frequency management. GT12 & 13 - Generation reduced on frequency management.  |
|                      | AFAM VI GAS/STEAM | 4                     | GT11 - 13 & ST10<br>4            | 650                                       | 640  | GT13<br>1              | 150                             | 116                                     | GT11 - Out on frequency management. GT12 & ST10 - Out due to gas constraint.   |
|                      | IBOM POWER GAS    | 3                     | GT3<br>1                         | 115                                       | 115  | GT3<br>1               | 115                             | 46.9                                    | GT3 - Generation reduced due to line constraint.   |
|                      | AES               | 0                     | 0<br>0                           | 0   | 0  | 0<br>0                 | 0                               | 0                                       | Out of production since 27/09/2014.  |
|                      | ASCO              | 2                     | 0<br>0                           | 0   | 0  | 0<br>0                 | 0                               | 0                                       | ST1 - Shut down due to leakage in the furnace.   |
|                      | OMOKU GAS         | 6                     | GT1, 2 & 5<br>3                  | 75  | 60   | GT1, 2 & 5<br>3        | 56.7                            | 56.7                                    | GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. GT6 Out on maintenance.   |
|                      | TRANS-AMADI       | 4                     | GT1, 2 & 4<br>3                  | 75  | 65   | GT1, 2 & 4<br>3        | 65                              | 65                                      | GT3 - Out on fault.  |
|                      | RIVERS            | 1                     | GT1<br>1                         | 180                                       | 160  | GT1<br>1               | 160                             | 6                                       | GT1 - Generation reduced on frequency management.  |
|                      | SUB TOTAL         | 131                   | 85                               | 8648                                      | 8030   | 51                     | 4236.4                          | 3055.9                                  | Frequency = 50.35Hz.   |

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

|              |     |         |        |        |         |          |          |   |
|--------------|-----|---------|--------|--------|---------|----------|----------|---|
| EGBIN        | 1   | 0       | 0      | 0      | 0       | 0        | 0        | ST6 - Shut down on Egbin management decision. |
| PARAS ENERGY | 8   | GT2 - 9 | 67.8   | 67.8   | GT2 - 9 | 67.8     | 67.8     | Available units on bar.                       |
| SUB TOTAL    | 9   | 8       | 67.8   | 67.8   | 8       | 67.8     | 67.8     |   |
| GRAND TOTAL  | 140 | 93      | 8715.8 | 8097.8 | 59      | 4,304.20 | 3,123.70 | Frequency = 50.35Hz.                          |

1.7C

| BILATERAL AGREEMENT UNITS DISPATCH - SUNDAY 05/08/2018.              |                   |            |               |            |                |             |   |
|--|-------------------|------------|---------------|------------|----------------|-------------|---|
| 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           | ON         | 0100HRS       |            | 14             |             | TRIPPED ON E/F  |
|  | PTCEXPRESS        | 7          | 1200HRS       |            | 14             |             | TRIPPED ON INST. O/C                                  |
|  | SANKYO            | ON         | 0100HRS       |            | 23             |             | STATION OPENED TO ALLOW ISOALTION OF T1 60MVA         |
|  | FEEDER 8          | 9          | 0100HRS       |            | 23             |             | STATION OPENED TO ALLOW ISOALTION OF T1 60MVA         |
| IKORODU  | PULK IT           | 4          | 0900HRS       |            | 24             |             | NIL   |
|  | INDUSTRIAL        | 6          | 2100HRS       |            | 24             |             | NIL   |
|  | SPINTEX           | 8          | 0100HRS       |            | 24             |             | NIL   |
|  | DANGOTE           | ON         | 0100HRS       |            | 24             |             | NIL   |
|  | LAND CRAFT        | 10         | 2300HRS       |            | 24             |             | NIL   |
| ALAUSA   | TR4 15MVA         | 4.1        | 0100HRS       |            | 24             |             | NIL   |
|  | TR5 -15MVA        | 3.7        | 0200HRS       |            | 24             |             | NIL   |
|  | ALAUSA            | 11.8       | 2000HRS       |            | 24             |             | NIL   |
| M/LAND   | PTC (MARYLAND)    | 12         | 1400HRS       |            | 23             |             | OPENED DUE TO REPAIR WORK ON T-60MVA SEC BUS ISOALTOR |
|  | <b>TOTAL LOAD</b> | <b>56</b>  |               |            |                |             |   |

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB OF SUNDAY 05/08/018

| FEEDER                       | MAX LOAD (MW) | TIME (HRS) | MIN LOAD (MW) | TIME (HRS) | HOURS IN SERVICE | TOTAL (MWH) | REMARK |
|------------------------------|---------------|------------|---------------|------------|------------------|-------------|--------|
| Ikeja West/Sakete 330kV line | 70.2          | 12:00      | 67.8          | 01:00      | 24               | 1656        | NIL    |

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: FRIDAY 04/08/2018

| COMPANY NAME     | VOL-TAGE LEVEL | CON-TRAC-TUAL LOAD (MW) | MAX LOAD (MW) | TIME (HRS) | MIN LOAD (MW) | TIME (HRS) | HOURS IN SERVICE | TOTAL (MWH) | REMARK                 |
|------------------|----------------|-------------------------|---------------|------------|---------------|------------|------------------|-------------|------------------------|
| INNER GALAXY     |                | ON                      | 40            | 21:00      | 10            | 09:00      | 17               | 496         | NIL                    |
| KAM STEEL        | 132kV line 2   | 15.0                    | 0.3           | 23:00      | 0.2           | 13:00      | 24               | 5.1         | SUPPLY NOT INTERRUPTED |
| ASAKA CEMENT     |                | 0                       | 6.5           | 03:00      | 0.3           | 06:00      | 9                | 29.65       | NIL                    |
| KAM INTEGRATED   |                | 15.0                    | 3.3           | 04:00      | 1.2           | 16:00      | 24               | 44.7        | SUPPLY NOT INTERRUPTED |
| OLAM FLOUR MILLS | 33kV feeder    | 3.0                     | 1.9           | 02:00      | 0.5           | 22:00      | 24               | 21.9        | SUPPLY NOT INTERRUPTED |
| LORDSMITH        |                | 0                       | 0             | 0:00       | 0             | 0          | 0                | 0.0         | ON SOAK                |



**5.0 OUTAGES:**

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

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

- 1 04:00 - 04:07Hrs, Jos/Gombe 330kV line (cct S1E) CB tripped at Jos T/S on over voltage, shot IP = 0, 3P = 0. LHR = 105MW
- 2 11:45 - 12:04Hrs, Benin/Asaba 330kV line (cct B3D) CBs tripped at both ends on the following relay indications:  
**At Benin T/S:** Siprotec Relay: Zone 1 trip, E/F, carrier sent, distance pick up = L23, PU time = 179ms, trip time = 96ms, distance = 24.3km  
**At Asaba T/S:** SEL Relay: Zone 2 & 4 O/C Yellow & Blue phases. LHR = 51MW
- 3 12:39 - 12:50Hrs, Alaoji/Afam 132kV line 2 CB tripped at Afam T/S on Siemens relay 3 phases. LHR = 52.7MW
- 4 19:25 – 19:45Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line CB tripped at Ayede T/S on Siemens Backup O/C Yellow & Blue Phases. LHR = 65MW.
- 5 14:27 through 24:00Hrs, Ogba T/S 60MVA 132/33kV transformer T1 primary and secondary CBs tripped on differential relay. LHR = 7MW.
- 6 22:01 – 22:29Hrs, Aba/Itu 132kV line CB tripped at Aba T/S on O/C & E/F relay. LHR = 42MW.
- 7 22:01 – 23:11Hrs, Itu/Uyo 132kV line CB tripped at Itu T/S on instantaneous O/C Yellow Phase.

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

- 1 11:35 - 18:51Hrs, Jos/Gombe 330kV line (cct S1E) was taken out to continue the replacement of defective isolators at Jos T/S. Load loss = 90MW
- 2 13:22 – 17:31Hrs, Ayede/Ibadan North/Iwo/Iseyin 132kV line was taken out to enable the maintenance crew amend cut conductor strands between towers 755 – 756. Load loss = 72MW.

**5(D) URGENT OUTAGES:-**

- 1 12:20 - 13:42Hrs, Delta/Efurun 132kV line was taken out to treat hot spot on Red phase isolator clamp at Delta T/S. Load loss = 40.4MW
- 2 18:11 – 19:20Hrs, Ikeja West/Alimosho 132kV line 2 was taken out for isolation of Ogba T/S 60MVA 132/33kV transformer T1. Load loss = 30MW.
- 3 22:01 – 23:32Hrs, Ibom Power GT3 went on island operation feeding Eket and Uyo due to tripping of Itu/Uyo 132kV line feeding Eket and Uyo. Load reduced from 70MW-35MW

**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).
- 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           | 32          |
| OPTIC FIBRE | 13           | 10          |

**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 Kaduna.

**7 INTERNATIONAL LINES:-**

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

Maximum load - 258MW at 20:00Hrs.  
 Minimum load - 158MW at 07:00Hrs.

**B BIRNIN KEBBI/NAMEY 132KV LINE**

Maximum load - 102MW at 22:00Hrs.  
 Minimum load - 71MW at 08:00Hrs.

**C KATSINA/GAZAQUA/MARADI 132KV LINE**

Maximum load - 32.0MW at 21:00Hrs.  
 Minimum load - 24.0MW at 04:00Hrs.

**8 MISCELLANEOUS:-**

- 1 00:03Hrs, Shiroro P/S reduced generation by 100 MW. Frequency was 50.53Hz
- 2 00:11 through 24:00Hrs, Geregu Gas GT13 was shut down on frequency management. Load loss = 119MW
- 3 01:31Hrs, Shiroro P/S reduced generation by 100 MW. Frequency was 50.53Hz
- 4 01:51 - 18:29Hrs, Jebba 2G3 was shut down on frequency management. Load loss = 67MW
- 5 04:18 through 24:00Hrs, Azura-Edo GT11 was shut down on frequency management. Load loss = 75MW
- 6 05:36Hrs, Shiroro P/S increased generation by 80 MW. Frequency was 50.21Hz
- 7 06:20Hrs, Azura-Edo IPP increased generation by 60MW. Frequency was 50.17Hz
- 8 06:25Hrs, Jebba 2G2 was tied. The unit was out on frequency management.
- 9 07:17Hrs, Shiroro P/S reduced generation by 100 MW. Frequency was 50.53Hz
- 10 08:00 - 15:13Hrs, Jebba 2G4 was shut down on frequency management. Load loss = 75MW
- 11 08:08Hrs, Azura-Edo IPP reduced generation by 50MW. Frequency was 50.60Hz
- 12 08:14 through 24:00Hrs, Shiroro 411G2 was shut down on frequency management. Load loss = 50MW
- 13 10:14Hrs, Gbarain NIPP reduced generation by 30MW. Frequency was 50.61Hz
- 14 10:15Hrs, Rivers IPP reduced generation by 50MW. Frequency was 50.61Hz
- 15 10:17Hrs, Geregu Gas reduced generation by 65MW. Frequency was 50.61Hz

|     |    |   |
|-----|----|---|
| 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            | 12                  | 7                 |
| 132kV          | 102           | 81                  | 21                |

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:**

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

- New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 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.

- 10:17Hrs, Geregu NIPP reduced generation by 50MW. Frequency was 50.61Hz
  - 10:18Hrs, Olorunsogo NIPP reduced generation by 40MW. Frequency was 50.61Hz
  - 10:19 - 19:48Hrs, Omotosho Gas GT5 was shut down on frequency management. Load loss = 30.2MW
  - 12:25Hrs, Delta GT19 was tied. The unit was out on frequency management.
  - 12:26Hrs, Delta GT20 was shut down to swap with GT19, 93MW was transferred to GT19
  - 12:38Hrs, Shiroro P/S increased generation by 50 MW. Frequency was 50.21Hz
  - 15:02Hrs, Kainji 1G12 was tied. The unit was out on maintenance.
  - 19:06Hrs, Afam IV GT18 was tied. The unit was out on gas constraint.
  - 19:38Hrs, Afam VI GT11 was tied. The unit was out on gas constraint.
  - 19:55Hrs, Sapele ST2 was tied. The unit was out on burner failure.
  - 22:05 through 24:00Hrs, Jebba 2G3 was shut down on frequency management. Load loss = 75MW.
  - 23:15 through 24:00Hrs, Delta GT19 was shut down on frequency management. Load loss = 91MW.
  - 23:41 through 24:00Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 68MW.
- \*\*\*\* 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**

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

**SHIRORO REGION**

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

**ABUJA REGION**

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

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- Benin, Ikeja West, Onitsha, Egbin, Uguwaji, Jos, Gwagwalada & Alaoji T/S.  
**FOR MORE INFORMATION: NCC Telephone Lines -**
  - PAX 09/300, 309, 303 & 305.
  - NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
  - PLS - 622
  - GM (NCC) - 08036744641.

- 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.

e AGM (S/O) - 08056002757. CUG: 08129458475

**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.





