

## CONTENTS

| <b>A) Summary Report</b>                                        | <b>Page No.</b> |
|-----------------------------------------------------------------|-----------------|
| I. Grid Overview during the Month                               | 1               |
| 2. Commissioning of New Units/Lines/Transformers                | 1               |
| 3. Frequency Profile                                            | 2               |
| 4. Power Supply Position in Northern Region                     | 2               |
| 5. Schedule Vs Drawal of Constituents                           | 3               |
| 6. Inter Regional Exchanges                                     | 3               |
| <br><b>B) Detailed Report</b>                                   |                 |
| I Details of Installed/Effective Capacity                       | 4-8             |
| II. Breakup of Hydro Capacity                                   | 9               |
| III. Frequency Profile                                          | 10              |
| IV. Voltage Profile                                             | 11              |
| V. Regional Power Supply Position                               | 12              |
| VI. Daily Peak/Off Peak Demand Met By Constituents              | 13-14           |
| VII. Daily Consumption By Constituents                          | 15              |
| VIII. Schedule vs Actual Drawal of Constituents                 | 16-17           |
| IX. Schedule vs Injection of ISGS                               | 18-20           |
| X. Daily Generation Details of State Sector Stations            | 21              |
| XI. Performance of Generating Stations                          | 22-24           |
| XII. Energy details of Bilateral Agreements (Intra-Regional)    | 25              |
| XIII. Energy details of Bilateral Agreements (Inter-Regional)   | 26              |
| XIV Inter Regional Exchanges                                    | 27-28           |
| XV Progress of Installation of Shunt Capacitors                 | 29              |
| XVI Hydraulic Data for Reservoirs                               | 30              |
| <br><b>C) Annexures</b>                                         |                 |
| 1. Load Duration Curve of Northern Region                       |                 |
| 2. Frequency Duration Curve of Northern Region                  |                 |
| 3. Load Curve Of Northern Region for the Maximum Demand Met Day |                 |
| 4. Load Curve Of Northern Region for the Minimum Demand Met Day |                 |
| 5. Demand Met and Requirement of Northern Region (MU)           |                 |
| 6. Grid Incidents                                               |                 |
| 7. 400 KV Grid Diagram of Northern Region                       |                 |

**NORTHERN REGION GRID REPORT FOR THE MONTH OF JULY 2003****A) Summary Report****1. Grid Overview during the Month**

During the month of July 2003 the average system frequency was 50.05 Hz and frequency remained in the normal range i.e. between 49.0 & 50.5 Hz for 83.45% of the time compared to 70.42% during the last year i.e. July 2002. The average frequency variation index during the month was 2.04. However, large gap between maximum and minimum frequencies and fluctuation in frequency from low to high and vice-versa reminds the need of implementation of free governor operation on all generating units in the region at the earliest.

Overall voltage profile in the grid during the month has been better on most of the 400 kV buses compared to last year. For example, the minimum voltages at 400 kV Dadri and 220 kV BTPS were 371 kV and 184 kV compared to last year i.e. 348 kV and 170 kV respectively. There was no major transmission outage during July 2003.

During July 2003 there was no major grid incident. However there were some minor incident which are reported at annexure-IV

**2. Commissioning of New Units/Lines/Transformers During the Month :**

- i) Kota TPS #6 ( 195 MW ) synchronised for the first time on 30.07.2003.
- ii) 400 kV switchyard of Chamera stage-II has been charged on 30.07.2003 for the first time after completion of LILO work of Chamera-I -- Kishanpur line.

### 3. Frequency Profile :

|                   |       |    |    |       |          |            |
|-------------------|-------|----|----|-------|----------|------------|
| Maximum frequency | 51.34 | Hz | at | 08.06 | hours on | 15.07.2003 |
| Minimum frequency | 48.25 | Hz | at | 23.15 | hours on | 13.07.2003 |
| Average frequency | 50.05 | Hz |    |       |          |            |

Frequency distribution in %

| Hz        | < 48.5 | <49.0 | 49.0-50.5 | > 50.5 |
|-----------|--------|-------|-----------|--------|
| % of time | 0.01   | 1.59  | 83.45     | 14.96  |

Frequency Variation Index

|                 |      |
|-----------------|------|
| Monthly Average | 2.04 |
| Maximum         | 5.53 |
| Minimum         | 1.03 |

### 4. Power Supply Position :

#### a. Average Energy/day (Net)

| State / U.T. | Demand met MU/Day | Requirement MU/Day | Shortage MU/Day | Shortage %  |
|--------------|-------------------|--------------------|-----------------|-------------|
| Punjab       | 108.92            | 111.66             | 2.74            | 2.45        |
| Haryana      | 58.72             | 59.15              | 0.43            | 0.73        |
| Rajasthan    | 54.36             | 54.36              | 0.00            | 0.00        |
| U.P.         | 104.95            | 127.04             | 22.09           | 17.39       |
| Utttranchal  | 11.14             | 11.34              | 0.20            | 1.76        |
| Delhi        | 60.25             | 61.20              | 0.95            | 1.55        |
| H.P.         | 9.89              | 9.89               | 0.00            | 0.00        |
| J & K *      | 18.31             | 19.81              | 1.50            | 7.57        |
| Chandigarh   | 3.55              | 3.55               | 0.00            | 0.00        |
| N.F.F./Rail  | 1.68              | 1.68               | 0.00            | 0.00        |
| <b>Total</b> | <b>431.77</b>     | <b>459.68</b>      | <b>27.91</b>    | <b>6.07</b> |

#### b. Peak MW

| State / U.T.                   | MAX. Demand met MW | MAX. Requirement MW | Shortage MW | Shortage %       |
|--------------------------------|--------------------|---------------------|-------------|------------------|
|                                | <b>A</b>           | <b>B</b>            | <b>C</b>    | <b>(C/B)*100</b> |
| Punjab                         | 5484               | 5726                | 242         | 4.23             |
| Haryana                        | 3117               | 3385                | 268         | 7.92             |
| Rajasthan                      | 3233               | 3233                | 0           | 0.00             |
| U.P.                           | 5501               | 7177                | 1676        | 23.35            |
| Utttranchal                    | 668                | 708                 | 40          | 5.65             |
| Delhi                          | 3284               | 3389                | 105         | 3.10             |
| H.P.                           | 491                | 491                 | 0           | 0.00             |
| J & K *                        | 1006               | 1132                | 126         | 11.13            |
| Chandigarh                     | 185                | 185                 | 0           | 0.00             |
| N.F.F./Rail                    | 80                 | 80                  | 0           | 0.00             |
| <b>Region</b>                  | <b>21933</b>       | <b>23427</b>        | <b>1494</b> | <b>6.38</b>      |
| Diversity Factor = <b>1.10</b> |                    |                     |             |                  |

\* Approximate and Estimated

5. **Schedule Vs Drawal By the Constituents :**

(All figs in M.U)

| State / U.T. | Schedule | Actual Drawal | OD/UD   |
|--------------|----------|---------------|---------|
| Punjab       | 1554.96  | 1674.84       | 119.88  |
| Haryana      | 1030.13  | 1141.55       | 111.42  |
| Rajasthan    | 962.98   | 905.14        | -57.84  |
| U.P.         | 1418.69  | 1534.20       | 115.51  |
| Uttranchal   | -13.17   | -49.50        | -36.33  |
| Delhi        | 1346.44  | 1169.36       | -177.08 |
| H.P.         | -45.85   | -127.73       | -81.88  |
| J & K        | 421.02   | 411.51        | -9.51   |
| Chandigarh   | 130.85   | 120.31        | -10.54  |
| N.F.F./Rail  | 50.53    | 52.00         | 1.47    |

6. **Inter Regional Exchanges**Energy  
M.U.Peak  
MW**Import**

|    |                                    |        |     |
|----|------------------------------------|--------|-----|
| a) | From WR over HVDC Vindhyachal B/B  | 23.18  | 500 |
| b) | From WR to over 220 kV Ujjain-Kota | 0      | 0   |
| c) | From ER over HVDC Sasaram B/B      | 108.12 | 500 |
| d) | From ER over 220 kV Dehri-Sahupuri | 0      | 0   |

**Export**

|    |                                             |       |     |
|----|---------------------------------------------|-------|-----|
| d) | To WR over HVDC Vindhyachal B/B             | 31.44 | 500 |
| e) | To WR (MP) over 220 kV Auraiya-Malanpur     | 14.17 | 26  |
| f) | To ER (Bihar) over 220 kV/132kV lines       | 12.70 | 100 |
| g) | To Nepal over 132 kV Tanakpur-Mahendernagar | 3.69  | 9   |
| h) | To ER over HVDC Sasaram B/B                 | 3.13  | 300 |

## B). Detailed Report

### I. Details of Installed/Effective Capacity at the end of July 2003

|                                               | <u>STATION</u>        | <u>INSTALLED CAPACITY</u>    | <u>EFFECTIVE CAPACITY</u>    |
|-----------------------------------------------|-----------------------|------------------------------|------------------------------|
|                                               |                       | (MW)                         |                              |
| <b>A</b>                                      | <b>NTPC</b>           |                              |                              |
| (a)                                           | Badarpur TPS          | 3x100+2x210 720.00           | 3x95+2x210 705.00            |
| (b)                                           | Singrauli STPS        | 5x200+2x500 2000.00          | 5x200+2x500 2000.00          |
| (c)                                           | Rihand STPS           | 2x500 1000.00                | 2x500 1000.00                |
| (d)                                           | Dadri NCTPS           | 4x210 840.00                 | 4x210 840.00                 |
| (e)                                           | Unchahar TPS          | 2x210 + 2x210 840.00         | 2x210 + 2x210 840.00         |
| (f)                                           | Tanda TPS             | 4x110 440.00                 | 4x110 440.00                 |
| (g)                                           | Anta GPS              | 3x88.71+1x153.20 419.33      | 3x88.71+1x153.20 419.33      |
| (h)                                           | Auraiya GPS           | 4x111.19+2x109.30 663.36     | 4x111.19+2x109.30 663.36     |
| (i)                                           | Dadri GPS             | 4x130.19+2x154.51 829.78     | 4x130.19+2x154.51 829.78     |
| (j)                                           | Faridabad GPS         | 2x137.75 +1x156.07 431.57    | 2x137.75 +1x156.07 431.57    |
|                                               | Sub-Total             | <b>8184.04</b>               | <b>8169.04</b>               |
| <b>B</b>                                      | <b>NHPC</b>           |                              |                              |
| (a)                                           | Bairasiul             | 3x60 180.00                  | 3x60 180.00                  |
| (b)                                           | Salal Stage - I       | 3x115 345.00                 | 3x115 345.00                 |
| (c)                                           | Salal Stage - II      | 3x115 345.00                 | 3x115 345.00                 |
| (d)                                           | Tanakpur HPS          | 3x40 120.00                  | 3x31.4 94.20                 |
| (e)                                           | Chamera HPS           | 3x180 540.00                 | 3x180 540.00                 |
| (f)                                           | URI                   | 4x120 480.00                 | 4x120 480.00                 |
|                                               | Sub-Total             | <b>2010.00</b>               | <b>1984.20</b>               |
| <b>C.</b>                                     | <b>NPC</b>            |                              |                              |
| (a)                                           | RAPS -A               | 2x220 440.00                 | 1x100+1x200 300.00           |
| (b)                                           | RAPS -B               | 2x220 440.00                 | 2x220 440.00                 |
| (c)                                           | NAPS                  | 2x235 470.00                 | 2x235 470.00                 |
|                                               | Sub-Total             | <b>1350.00</b>               | <b>1210.00</b>               |
| <b>Total Central Sector<br/>( A + B + C )</b> |                       | <b>11544.04</b>              | <b>11363.24</b>              |
| <b>2</b>                                      | <b>BBMB</b>           |                              |                              |
| <b>(a)</b>                                    | <b>Bhakra Complex</b> |                              |                              |
| (i)                                           | Bhakra (L)            | 5x108 540.00                 | 5x108 540.00                 |
| (ii)                                          | Bhakra (R)            | 5x157 785.00                 | 5x157 785.00                 |
| (iii)                                         | Ganguwal              | 1x29.25+1x27.63+1x26.7 83.58 | 1x29.25+1x27.63+1x26.7 83.58 |
| (iv)                                          | Kotla                 | 1x29.25+1x24.2+1x28.12 81.57 | 1x29.25+1x24.2+1x28.12 81.57 |
|                                               | Sub-Total             | <b>1490.15</b>               | <b>1490.15</b>               |
| (b)                                           | Dehar                 | 6x165 990.00                 | 6x165 990.00                 |
| (c)                                           | Pong                  | 1x60 + 5x66 390.00           | 1x60 + 5x66 390.00           |
|                                               | <b>Total BBMB</b>     | <b>2870.15</b>               | <b>2870.15</b>               |

|          |                            |                      |                |                     |                |
|----------|----------------------------|----------------------|----------------|---------------------|----------------|
| <b>3</b> | <b>CHANDIGARH</b>          |                      |                |                     |                |
| (a)      | Diesel Gen Sets            |                      | <b>2.00</b>    |                     | <b>1.40</b>    |
| <b>4</b> | <b>DELHI</b>               |                      |                |                     |                |
|          | <b>THERMAL</b>             |                      |                |                     |                |
| (a)      | Indra Prastha              | 3x62.5+1x60          | 247.50         | 3x62.5+1x60         | 247.50         |
| (b)      | Rajghat                    | 1x15+2x67.5          | 150.00         | 1x14+2x67.5         | 149.00         |
| (c)      | Gas Turbines               | 6x30+3x34            | 282.00         | 6x30+3x34           | 282.00         |
| (d)      | Pragati Gas Turbines       | 2x108+1x114          | 330.00         | 2x108 +1x114        | 330.00         |
|          | <b>Total DELHI</b>         |                      | <b>1009.50</b> |                     | <b>1008.50</b> |
| <b>5</b> | <b>HARYANA</b>             |                      |                |                     |                |
|          | <b>HYDRO</b>               |                      |                |                     |                |
| (a)      | Western Yamuna Canal (WYC) | 6x8                  | 48.00          | 6x8                 | 48.00          |
|          | <b>Total Hydro</b>         |                      | <b>48.00</b>   |                     | <b>48.00</b>   |
|          | <b>THERMAL</b>             |                      |                |                     |                |
| (b)      | Faridabad (New)            | 3x60                 | 180.00         | 3x55                | 165.00         |
| (c)      | Panipat                    | 4x110+2x210          | 860.00         | 4x110+2x210         | 860.00         |
|          | <b>Total Thermal</b>       |                      | <b>1040.00</b> |                     | <b>1025.00</b> |
| (d)      | Magnum Diesel (IPP)        | 4x6.3                | 25.20          | 4x6.3               | 25.20          |
|          | <b>Total Haryana</b>       |                      | <b>1113.20</b> |                     | <b>1098.20</b> |
| <b>6</b> | <b>HIMACHAL PRADESH</b>    |                      |                |                     |                |
|          | <b>HYDRO</b>               |                      |                |                     |                |
| (a)      | Giri                       | 2x30.00              | 60.00          | 2x30.00             | 60.00          |
| (b)      | Bassi                      | 4x15.00              | 60.00          | 4x15.00             | 60.00          |
| (c)      | Binwa                      | 2x 3.00              | 6.00           | 2x 3.00             | 6.00           |
| (d)      | Rongtong                   | 4x 0.50              | 2.00           | 4x 0.50             | 2.00           |
| (e)      | Andhra                     | 3x 5.65              | 16.95          | 3x 5.65             | 16.95          |
| (f)      | Micro Hydel+Killar+Thirot  |                      | 8.75           |                     | 8.75           |
| (g)      | Nogli                      | 2x 0.25+4x0.50       | 2.50           | 2x 0.25+4x0.50      | 2.50           |
| (h)      | Bhabha (H)                 | 3x40.00              | 120.00         | 3x40.00             | 120.00         |
| (i)      | Baner (H)                  | 3x 4.00              | 12.00          | 3x 4.00             | 12.00          |
| (j)      | Gaj (H)                    | 3x 3.50              | 10.50          | 3x 3.50             | 10.50          |
| (k)      | Sal -2                     | 1x 2                 | 2.00           | 1x 2                | 2.00           |
| (l)      | Gumma                      | .                    | 3.00           | 3                   | 3.00           |
| (m)      | Ghanvi                     | 2x11.25              | 22.50          | 2x11.25             | 22.50          |
| (n)      | Diesel Gen. Sets           |                      | 0.00           |                     | 0.00           |
| (o)      | Malana (IPP)               | 2x43                 | 86.00          | 2x43                | 86.00          |
| (p)      | Baspa (IPP)                | 3x100                | 300.00         | 3x100               | 300.00         |
|          | <b>Total HP</b>            |                      | <b>712.20</b>  |                     | <b>712.20</b>  |
| <b>7</b> | <b>J &amp; K</b>           |                      |                |                     |                |
|          | <b>HYDRO</b>               |                      |                |                     |                |
| (a)      | Lower Jhelum               | 3x35.0               | 105.00         | 3x35.0              | 105.00         |
| (b)      | Upper Sindh                | 2x11.30+3x35.0       | 127.60         | 2x11.30+3x35.0      | 127.60         |
| (c)      | Ganderbal                  | 2x3+2x4.5            | 15.00          | 2x3+2x4.5           | 15.00          |
| (d)      | Mohra                      | 2x4.5                | 9.00           | 2x4.5               | 9.00           |
| (e)      | Chenani                    | 5x4.66 +2X1.0 +3x2.5 | 32.80          | 5x4.66 +2X1.0+3x2.5 | 32.80          |
| (f)      | Stakna                     | 2x2.0 +3x1.25 +2.0   | 9.75           | 2x2.0 +3x1.25 +2.0  | 9.75           |
| (g)      | Small Hydel                |                      | 3.54           |                     | 3.54           |
| (h)      | Sewa                       | 3x3.0                | 9.00           | 3x3.0               | 9.00           |
|          | <b>Total Hydro</b>         |                      | <b>311.69</b>  |                     | <b>311.69</b>  |

| <b>J &amp; K (Contd.)</b> |                                   |                    |                |                    |
|---------------------------|-----------------------------------|--------------------|----------------|--------------------|
| (h)                       | <b>GAS TURBINES</b>               |                    |                |                    |
|                           | Pampore GT St - I                 | 3x25.0             | 75.00          | 3x25.0             |
|                           | Pampore GT St - II                | 4x25.0             | 100.00         | 4x25.0             |
| 9h)                       | <b>Total Gas</b>                  |                    | <b>175.00</b>  | <b>175.00</b>      |
| (I)                       | Diesel Gen. Sets                  |                    | 8.94           | 7.18               |
|                           | <b>Total J &amp; K</b>            |                    | <b>495.63</b>  | <b>493.87</b>      |
| <b>8</b>                  | <b>PUNJAB</b>                     |                    |                |                    |
| (a)                       | <b>HYDRO</b>                      |                    |                |                    |
|                           | Jogindernagar/<br>Shanan          | 4x15+1x50          | 110.00         | 4x15+1x50          |
| (b)                       | Upper Behari Doab<br>Canal (UBDC) | 3x15+3x15          | 90.00          | 3x15+3x15          |
| (c)                       | Mukerian                          | 6x15+6x19.5        | 207.00         | 6x15+6x19.5        |
| (d)                       | Anandpur Sahib (APS)              | 4x33.5             | 134.00         | 4x33.5             |
| (e)                       | Ranjit Sagar HPS                  | 4x150              | 600.00         | 4x150              |
| (f)                       | Small Hydel                       |                    | 4.10           | 4.10               |
|                           | <b>Total Hydro</b>                |                    | <b>1145.10</b> | <b>1145.10</b>     |
| (g)                       | <b>THERMAL</b>                    |                    |                |                    |
|                           | Guru Nanak Dev<br>TPS (Bhatinda)  | 4x110              | 440.00         | 4x110              |
| (h)                       | Guru Gobind Singh<br>TPS (Ropar)  | 6x210              | 1260.00        | 6x210              |
| (i)                       | Lehra Mohabbat TPS                | 2x210              | 420.00         | 2x210              |
| (j)                       | Jhalkeri Rice Straw<br>Fired      | 1x10               | 10.00          | 1x10               |
|                           | <b>Total Thermal</b>              |                    | <b>2130.00</b> | <b>2130.00</b>     |
|                           | <b>Total Punjab</b>               |                    | <b>3275.10</b> | <b>3275.10</b>     |
| <b>9</b>                  | <b>RAJASTHAN</b>                  |                    |                |                    |
| (a)                       | <b>HYDRO</b>                      |                    |                |                    |
|                           | Mahi Bajaj Sagar                  | 2x25+2x45          | 140.00         | 2x25+2x45          |
| (b)                       | Rana Pratap Sagar (RPS)           | 4x43               | 172.00         | 4x43               |
| (c)                       | Jawahar Sagar (JS)                | 3x33               | 99.00          | 3x33               |
| (d)                       | Anoopgarh                         | 6x1.5              | 9.00           | 6x1.5              |
| (e)                       | Small Hydro                       |                    | 14.85          | 14.85              |
|                           | <b>Total Hydro</b>                |                    | <b>434.85</b>  | <b>434.85</b>      |
| (f)                       | <b>THERMAL</b>                    |                    |                |                    |
|                           | Kota TPS                          | 2x110+3x210 +1x195 | 1045.00        | 2x110+3x210 +1x195 |
| (g)                       | Suratgarh TPS                     | 5x250              | 1250.00        | 5x250              |
| (g)                       | Ramgarh GT                        | 1x3                | 3.00           | 1x3                |
| (i)                       | Ramgarh GT EXT.                   | 1x35.5             | 35.50          | 1x35.5             |
|                           | <b>Total Thermal</b>              |                    | <b>2333.50</b> | <b>2333.50</b>     |
| (J)                       | Wind farm                         |                    | 14.01          | 14.01              |
|                           | <b>Total Rajasthan</b>            |                    | <b>2782.36</b> | <b>2782.36</b>     |

| 10  | UP                                |              |                 |              |                 |
|-----|-----------------------------------|--------------|-----------------|--------------|-----------------|
|     | <b>HYDRO</b>                      |              |                 |              |                 |
| (a) | Rihand                            | 6x50.0       | 300.00          | 6x50.0       | 300.00          |
| (b) | Obra                              | 3x33.0       | 99.00           | 3x33.0       | 99.00           |
| (c) | Matatilla                         | 3x10.0       | 30.00           | 3x10.0       | 30.00           |
| (d) | Ganga Canal                       |              |                 |              |                 |
|     | Bhola                             | 4x.375+2x.6+ |                 | 4x.375+2x.6+ |                 |
|     | Salara                            | 2x1.5+       |                 | 2x1.5+       |                 |
|     | Nirgazni                          | 2x2.5        | 10.70           | 2x2.5        | 10.70           |
| (e) | Khara                             | 3x24.0       | 72.00           | 3x24.0       | 72.00           |
| (f) | Sobla & small hydro               | 6 +12.2      | 18.20           | 6 +12.2      | 18.20           |
|     | <b>Total Hydro</b>                |              | <b>529.90</b>   |              | <b>529.90</b>   |
|     | <b>THERMAL</b>                    |              |                 |              |                 |
| (g) | Obra                              | 5x50         | 250.00          | 4x40         | 160.00          |
| (h) | Obra Extn. - I                    | 3x100        | 300.00          | 3x94         | 282.00          |
| (i) | Obra Extn. - II                   | 5x200        | 1000.00         | 5x200        | 1000.00         |
| (j) | Panki                             | 1x32         | 32.00           | 1x32         | 32.00           |
| (k) | Panki Extn.                       | 2x110        | 220.00          | 2x105        | 210.00          |
| (l) | Harduaganj - A                    | 3x30         | 90.00           | 0            | 0.00            |
| (m) | Harduaganj - B                    | 2x50+2x60    | 220.00          | 1x40+2x55    | 150.00          |
| (n) | Harduaganj - C                    | 2x60+1x110   | 230.00          | 2x60+1x105   | 225.00          |
| (o) | Paricha                           | 2x110        | 220.00          | 2x110        | 220.00          |
| (p) | Anpara - A                        | 3x210        | 630.00          | 3x210        | 630.00          |
| (q) | Anpara - B                        | 2x500        | 1000.00         | 2x500        | 1000.00         |
|     | <b>Total Thermal</b>              |              | <b>4192.00</b>  |              | <b>3909.00</b>  |
|     | <b>Total UP</b>                   |              | <b>4721.90</b>  |              | <b>4438.90</b>  |
| 11  | UTTARANCHAL                       |              |                 |              |                 |
|     | <b>HYDRO</b>                      |              |                 |              |                 |
| (a) | Khatima                           | 3x13.8       | 41.40           | 3x13.8       | 41.40           |
| (b) | Ramganga                          | 3x66.0       | 198.00          | 3x66.0       | 198.00          |
| (c) | Ganga Canal                       |              |                 |              |                 |
|     | Chitwa                            | 2x1.5+       |                 | 2x1.5+       |                 |
|     | Mohamedpur                        | 3x3.1+       |                 | 3x3.1+       |                 |
|     | Pathri                            | 3x6.8        | 32.70           | 3x6.8        | 32.70           |
| (d) | Yamuna ( I & IV )                 |              |                 |              |                 |
|     | - Dhalipur                        | 3x17.00+     |                 | 3x17.00+     |                 |
|     | - Dhakrani                        | 3x11.25+     |                 | 3x11.25+     |                 |
|     | - Kulhal                          | 3x10.00      | 114.75          | 3x10.00      | 114.75          |
| (e) | Chibro                            | 4x60.0       | 240.00          | 4x60.0       | 240.00          |
| (f) | Khodri                            | 4x30.0       | 120.00          | 4x30.0       | 120.00          |
| (g) | Chilla                            | 4x36.0       | 144.00          | 4x36.0       | 144.00          |
| (h) | Maneri Bhali                      | 3x30.0       | 90.00           | 3x30.0       | 90.00           |
|     | <b>Total Hydro</b>                |              | <b>980.85</b>   |              | <b>980.85</b>   |
|     | <b>Total Region<br/>(1 to 11)</b> |              | <b>29506.93</b> |              | <b>29024.77</b> |

**SUMMARY OF THE EFFECTIVE GENERATING CAPACITY (MW)**

| Agency / Source   | Hydro          | Thermal         | Gas/Diesel/Wind | Nuclear        | Total           | % of Total     |
|-------------------|----------------|-----------------|-----------------|----------------|-----------------|----------------|
| NTPC              | 0.00           | 5825.00         | 2344.04         | 0.00           | 8169.04         | 28.15%         |
| NHPC              | 1984.20        | 0.00            | 0.00            | 0.00           | 1984.20         | 6.84%          |
| NPC               | 0.00           | 0.00            | 0.00            | 1210.00        | 1210.00         | 4.17%          |
| BBMB              | 2870.15        | 0.00            | 0.00            | 0.00           | 2870.15         | 9.89%          |
| CHANDIGARH        | 0.00           | 0.00            | 1.40            | 0.00           | 1.40            | 0.00%          |
| DELHI             | 0.00           | 396.50          | 612.00          | 0.00           | 1008.50         | 3.47%          |
| HARYANA           | 48.00          | 1025.00         | 25.20           | 0.00           | 1098.20         | 3.78%          |
| HIMACHAL          | 712.20         | 0.00            | 0.00            | 0.00           | 712.20          | 2.45%          |
| J&K               | 311.69         | 0.00            | 182.18          | 0.00           | 493.87          | 1.70%          |
| PUNJAB            | 1145.10        | 2130.00         | 0.00            | 0.00           | 3275.10         | 11.28%         |
| RAJASTHAN         | 434.85         | 2295.00         | 52.51           | 0.00           | 2782.36         | 9.59%          |
| UP                | 529.90         | 3909.00         | 0.00            | 0.00           | 4438.90         | 15.29%         |
| UTTRANCHAL        | 980.85         | 0.00            | 0.00            | 0.00           | 980.85          | 3.38%          |
| <b>Total</b>      | <b>9016.94</b> | <b>15580.50</b> | <b>3217.33</b>  | <b>1210.00</b> | <b>29024.77</b> | <b>100.00%</b> |
| <b>% of TOTAL</b> | <b>31.07%</b>  | <b>53.68%</b>   | <b>11.08%</b>   | <b>4.17%</b>   | <b>100.00%</b>  |                |

Notes The above table does not take into account the shares of a state in power stations located in the neighbouring state. Such details are :

- (i) Haryana has one-third share in unit Nos. 2, 3, 4 at Indraprastha power stations of Delhi viz. 62.5 MW.
- (ii) HP has 25 % share in the Dhalipur, Dhakrani, Chibro and Khodri power houses of Uttranchal viz. 111.20 MW and 20 % share in the Kulhal and Khara hydro power houses viz. 20.40 MW. However, these shares are limited to actual physical drawals over designated transmission lines.
- (iii) HP has a fixed energy share (royalty) every month in the Shanan Power House of PSEB.  
0.38 LU/Day to 2.22 LU/Day.
- (iv) HP has 4.6 % share in Ranjit Sagar Dam project of PSEB viz. 27.60 MW.
- (iv) The shares of Rajasthan in Chambal and Satpura projects are as under :

CHAMBAL

| PROJECT           | LOCATED   | INSTALLED CAPACITY (MW) |
|-------------------|-----------|-------------------------|
| Gandhi Sagar      | M.P.      | 5 x 23 = 115            |
| Rana Pratap Sagar | Rajasthan | 4 x 43 = 172            |
| Jawahar Sagar     | Rajasthan | 3 x 33 = 99             |
| <b>Total</b>      |           | <b>386</b>              |

Rajasthan has 50 % share in the Chambal Projects viz. 193 MW.

SATPURA

| PROJECTS    | LOCATED | INSTALLED CAPACITY (MW)        |
|-------------|---------|--------------------------------|
| Satpura TPS | M.P.    | 5x62.5+200.0+3x210.0 = 1142.50 |

Rajasthan has 40 % share in the first five units of Satpura TPS viz 125 MW.

## II. BREAKUP OF HYDRO CAPACITY (MW) IN NORTHERN REGION AS ON 30.07.2003

| Agency / Source   | Run-of -the -river | Reservoir      | Total          |
|-------------------|--------------------|----------------|----------------|
| NHPC              | 1444.20            | 540.00         | 1984.20        |
| BBMB              | 1155.15            | 1715.00        | 2870.15        |
| DELHI             | 0.00               | 0.00           | 0.00           |
| HARYANA           | 48.00              | 0.00           | 48.00          |
| HP *              | 712.20             | 0.00           | 712.20         |
| J&K               | 311.69             | 0.00           | 311.69         |
| PUNJAB            | 545.10             | 600.00         | 1145.10        |
| RAJASTHAN         | 262.85             | 172.00         | 434.85         |
| UP                | 229.90             | 300.00         | 529.90         |
| UTTRANCHAL        | 782.85             | 198.00         | 980.85         |
| <b>TOTAL</b>      | <b>5491.94</b>     | <b>3525.00</b> | <b>9016.94</b> |
| <b>PERCENTAGE</b> | <b>59.60%</b>      | <b>40.40%</b>  | <b>100%</b>    |

\* Includes Malana IPP (86 MW) & Baspa IPP (300 MW)

## III.

## Frequency Profile

| Date    | % of Time Frequency |         |         |        |           |         |         |         |        |
|---------|---------------------|---------|---------|--------|-----------|---------|---------|---------|--------|
|         | < 48.00             | < 48.50 | < 49.00 | <49.50 | 49.0-50.5 | > 50.00 | > 50.50 | > 51.00 | >51.50 |
| 01      | 0.00                | 0.00    | 2.54    | 30.20  | 96.83     | 19.23   | 0.63    | 0.00    | 0.00   |
| 02      | 0.00                | 0.00    | 6.56    | 34.05  | 92.75     | 15.03   | 0.69    | 0.00    | 0.00   |
| 03      | 0.00                | 0.00    | 5.87    | 35.73  | 93.92     | 6.84    | 0.21    | 0.00    | 0.00   |
| 04      | 0.00                | 0.00    | 4.06    | 32.48  | 89.71     | 25.99   | 6.23    | 0.25    | 0.00   |
| 05      | 0.00                | 0.00    | 0.00    | 4.00   | 63.41     | 71.30   | 36.59   | 5.87    | 0.00   |
| 06      | 0.00                | 0.00    | 0.00    | 4.65   | 81.14     | 45.47   | 18.86   | 0.87    | 0.00   |
| 07      | 0.00                | 0.00    | 0.10    | 5.38   | 92.01     | 60.76   | 7.88    | 0.00    | 0.00   |
| 08      | 0.00                | 0.00    | 0.00    | 6.35   | 94.86     | 50.63   | 5.14    | 0.00    | 0.00   |
| 09      | 0.00                | 0.00    | 0.00    | 0.03   | 82.63     | 84.03   | 17.37   | 0.00    | 0.00   |
| 10      | 0.00                | 0.00    | 0.00    | 0.00   | 54.09     | 95.98   | 45.91   | 4.79    | 0.00   |
| 11      | 0.00                | 0.00    | 0.00    | 0.00   | 20.63     | 99.78   | 79.37   | 5.90    | 0.00   |
| 12      | 0.00                | 0.00    | 0.66    | 3.85   | 70.63     | 39.90   | 28.72   | 1.01    | 0.00   |
| 13      | 0.00                | 0.21    | 2.47    | 9.83   | 83.75     | 57.22   | 13.78   | 0.24    | 0.00   |
| 14      | 0.00                | 0.00    | 4.55    | 22.06  | 95.07     | 27.61   | 0.38    | 0.00    | 0.00   |
| 15      | 0.00                | 0.00    | 1.39    | 10.20  | 81.60     | 39.64   | 17.01   | 1.04    | 0.00   |
| 16      | 0.00                | 0.17    | 3.12    | 14.86  | 91.53     | 46.84   | 5.35    | 0.49    | 0.00   |
| 17      | 0.00                | 0.00    | 0.78    | 20.54  | 91.00     | 41.42   | 8.22    | 0.49    | 0.00   |
| 18      | 0.00                | 0.00    | 0.00    | 4.97   | 84.90     | 47.88   | 14.65   | 0.45    | 0.00   |
| 19      | 0.00                | 0.00    | 0.52    | 5.73   | 92.67     | 55.56   | 6.81    | 0.00    | 0.00   |
| 20      | 0.00                | 0.00    | 0.14    | 10.46  | 82.04     | 60.86   | 17.82   | 0.87    | 0.00   |
| 21      | 0.00                | 0.00    | 0.00    | 1.44   | 66.28     | 84.76   | 33.72   | 4.07    | 0.00   |
| 22      | 0.00                | 0.00    | 1.22    | 10.82  | 94.73     | 51.15   | 4.05    | 0.03    | 0.00   |
| 23      | 0.00                | 0.00    | 2.63    | 16.64  | 95.20     | 33.61   | 2.17    | 0.04    | 0.00   |
| 24      | 0.00                | 0.00    | 1.29    | 12.11  | 86.67     | 43.76   | 12.04   | 0.30    | 0.00   |
| 25      | 0.00                | 0.00    | 1.32    | 18.03  | 96.94     | 27.56   | 1.74    | 0.00    | 0.00   |
| 26      | 0.00                | 0.00    | 0.35    | 6.90   | 93.68     | 53.33   | 5.86    | 0.00    | 0.00   |
| 27      | 0.00                | 0.00    | 0.00    | 0.83   | 78.40     | 69.12   | 21.05   | 0.56    | 0.00   |
| 28      | 0.00                | 0.00    | 1.82    | 5.82   | 70.42     | 41.36   | 27.76   | 2.03    | 0.00   |
| 29      | 0.00                | 0.00    | 0.14    | 3.59   | 85.96     | 57.04   | 13.90   | 1.04    | 0.00   |
| 30      | 0.00                | 0.00    | 0.32    | 2.41   | 80.73     | 46.85   | 18.94   | 0.47    | 0.00   |
| 31      | 0.00                | 0.00    | 0.00    | 3.20   | 73.04     | 48.40   | 26.96   | 1.01    | 0.00   |
| Max     | 0.00                | 0.21    | 6.56    | 35.73  | 96.94     | 99.78   | 79.37   | 5.90    | 0.00   |
| Min     | 0.00                | 0.00    | 0.00    | 0.00   | 20.63     | 6.84    | 0.21    | 0.00    | 0.00   |
| Average | 0.00                | 0.01    | 1.59    | 12.08  | 83.45     | 57.05   | 14.96   | 0.95    | 0.00   |

| Frequency (Hz) |       |         |       | Average<br>Frequency | Frequency<br>Variation<br>Index |
|----------------|-------|---------|-------|----------------------|---------------------------------|
| Maximum        |       | Minimum |       |                      |                                 |
| Freq           | Time  | Freq    | Time  |                      |                                 |
| 50.61          | 08.06 | 48.71   | 15.50 | 49.68                | 2.21                            |
| 50.70          | 19.08 | 48.68   | 19.43 | 49.61                | 2.89                            |
| 50.68          | 08.08 | 48.65   | 20.31 | 49.54                | 3.08                            |
| 51.09          | 19.04 | 48.60   | 11.49 | 49.72                | 2.83                            |
| 51.20          | 03.48 | 49.10   | 23.16 | 50.30                | 3.14                            |
| 51.16          | 13.03 | 49.06   | 20.16 | 50.16                | 1.69                            |
| 50.94          | 18.03 | 48.97   | 21.35 | 50.10                | 1.17                            |
| 50.90          | 08.08 | 49.10   | 12.47 | 50.02                | 1.03                            |
| 50.94          | 10.33 | 49.47   | 20.16 | 50.26                | 1.31                            |
| 51.25          | 08.33 | 49.57   | 20.12 | 50.49                | 3.32                            |
| 51.07          | 08.33 | 49.95   | 00.09 | 50.69                | 5.53                            |
| 51.07          | 02.20 | 48.83   | 21.07 | 50.24                | 2.45                            |
| 51.03          | 13.09 | 48.25   | 23.15 | 50.10                | 2.09                            |
| 50.72          | 13.05 | 48.70   | 21.17 | 49.73                | 2.12                            |
| 51.34          | 08.06 | 48.76   | 00.04 | 50.07                | 2.04                            |
| 51.13          | 08.04 | 48.39   | 21.03 | 49.94                | 1.79                            |
| 51.25          | 08.06 | 48.92   | 00.09 | 49.89                | 1.95                            |
| 51.18          | 13.02 | 49.05   | 20.10 | 50.12                | 1.41                            |
| 50.88          | 19.05 | 48.79   | 21.08 | 50.08                | 1.18                            |
| 51.16          | 08.06 | 48.96   | 00.03 | 50.10                | 2.00                            |
| 51.22          | 08.07 | 49.26   | 20.50 | 50.35                | 2.67                            |
| 51.02          | 08.02 | 48.59   | 21.13 | 49.98                | 1.34                            |
| 51.02          | 14.04 | 48.62   | 20.50 | 49.84                | 1.58                            |
| 51.06          | 08.06 | 48.77   | 21.08 | 49.97                | 1.61                            |
| 50.83          | 19.05 | 48.73   | 21.03 | 49.80                | 1.59                            |
| 51.01          | 08.06 | 48.80   | 00.02 | 50.05                | 1.19                            |
| 51.16          | 19.05 | 49.32   | 04.50 | 50.33                | 1.88                            |
| 51.22          | 10.21 | 48.61   | 19.47 | 50.20                | 2.58                            |
| 51.28          | 19.03 | 48.92   | 21.06 | 50.17                | 1.53                            |
| 51.13          | 19.02 | 48.78   | 00.05 | 50.16                | 1.53                            |
| 51.32          | 13.04 | 49.22   | 20.11 | 50.25                | 2.00                            |
| 51.34          |       | 49.95   |       | 50.69                | 5.53                            |
| 50.61          |       | 48.25   |       | 49.54                | 1.03                            |
| 51.05          |       | 48.91   |       | 50.05                | 2.04                            |

## IV.

## Voltage Profile

| Date | 400 KV Dadri Voltage (kV) |       |         |       | 400 KV Kanpur Voltage (kV) |       |         |       | 220 KV BTPS Voltage (kV) |       |         |       | 400 KV Moga Voltage (kV) |       |         |       |
|------|---------------------------|-------|---------|-------|----------------------------|-------|---------|-------|--------------------------|-------|---------|-------|--------------------------|-------|---------|-------|
|      | Maximum                   |       | Minimum |       | Maximum                    |       | Minimum |       | Maximum                  |       | Minimum |       | Maximum                  |       | Minimum |       |
|      | Voltage                   | Time  | Voltage | Time  | Voltage                    | Time  | Voltage | Time  | Voltage                  | Time  | Voltage | Time  | Voltage                  | Time  | Voltage | Time  |
| 01   | 410                       | 08.05 | 382     | 15.49 | 404                        | 08.06 | 388     | 12.05 | 207                      | 08.05 | 190     | 15.40 | 406                      | 08.08 | 389     | 23.08 |
| 02   | 408                       | 05.03 | 376     | 11.27 | 404                        | 07.28 | 391     | 14.16 | 206                      | 03.05 | 185     | 14.24 | 403                      | 05.04 | 388     | 11.23 |
| 03   | 406                       | 08.08 | 371     | 11.02 | 404                        | 08.10 | 386     | 14.00 | 204                      | 08.08 | 184     | 14.49 | 403                      | 08.07 | 380     | 12.21 |
| 04   | 407                       | 19.05 | 374     | 12.03 | 404                        | 19.02 | 391     | 12.06 | 203                      | 08.02 | 191     | 12.12 | 400                      | 19.06 | 376     | 00.07 |
| 05   | 417                       | 08.09 | 390     | 17.27 | 413                        | 04.25 | 397     | 14.57 | 210                      | 07.40 | 196     | 14.56 | 406                      | 08.02 | 389     | 00.10 |
| 06   | 417                       | 13.05 | 393     | 23.44 | 410                        | 17.00 | 399     | 01.00 | 210                      | 05.05 | 199     | 01.02 | 416                      | 13.02 | 392     | 23.05 |
| 07   | 416                       | 04.13 | 391     | 11.47 | 408                        | 04.07 | 396     | 12.24 | 210                      | 04.07 | 194     | 14.31 | 403                      | 04.10 | 387     | 20.25 |
| 08   | 409                       | 08.07 | 386     | 20.02 | 410                        | 08.04 | 397     | 12.51 | 207                      | 04.10 | 192     | 12.46 | 401                      | 08.07 | 384     | 20.08 |
| 09   | 416                       | 18.59 | 393     | 00.14 | 415                        | 05.04 | 401     | 00.16 | 207                      | 05.03 | 193     | 11.03 | 405                      | 18.59 | 387     | 00.13 |
| 10   | 420                       | 02.52 | 399     | 14.42 | 414                        | 03.03 | 401     | 14.31 | 214                      | 02.54 | 185     | 14.09 | 407                      | 08.03 | 394     | 12.53 |
| 11   | 422                       | 03.33 | 409     | 00.09 | 415                        | 05.00 | 399     | 15.00 | 217                      | 03.54 | 197     | 18.36 | 400                      | 03.13 | 390     | 00.13 |
| 12   | 422                       | 01.33 | 384     | 19.47 | 407                        | 22.48 | 393     | 19.52 | 214                      | 03.04 | 197     | 19.54 | 401                      | 05.05 | 384     | 19.52 |
| 13   | 420                       | 02.49 | 387     | 19.56 | 412                        | 05.16 | 397     | 19.55 | 214                      | 03.17 | 194     | 20.03 | 402                      | 18.02 | 387     | 19.50 |
| 14   | 411                       | 03.52 | 383     | 11.16 | 406                        | 04.00 | 395     | 17.00 | 208                      | 03.50 | 191     | 11.20 | 406                      | 03.55 | 390     | 19.50 |
| 15   | 410                       | 08.09 | 384     | 19.57 | 407                        | 08.01 | 395     | 23.52 | 205                      | 06.02 | 191     | 20.01 | 407                      | 08.05 | 389     | 20.05 |
| 16   | 409                       | 08.04 | 386     | 19.54 | 409                        | 18.08 | 397     | 11.04 | 206                      | 05.05 | 193     | 15.04 | 405                      | 18.06 | 389     | 00.21 |
| 17   | 409                       | 08.12 | 385     | 20.18 | 409                        | 08.05 | 394     | 21.08 | 208                      | 08.07 | 195     | 19.49 | 409                      | 08.07 | 392     | 00.05 |
| 18   | 413                       | 13.03 | 390     | 20.10 | 409                        | 07.59 | 398     | 12.41 | 210                      | 05.40 | 196     | 20.10 | 408                      | 05.06 | 396     | 14.53 |
| 19   | 413                       | 03.28 | 385     | 20.00 | 410                        | 13.07 | 397     | 16.53 | 208                      | 03.20 | 189     | 18.37 | 409                      | 18.02 | 392     | 23.10 |
| 20   | 409                       | 08.04 | 384     | 12.23 | 410                        | 08.06 | 384     | 12.23 | 208                      | 06.02 | 195     | 04.00 | 407                      | 08.05 | 390     | 12.23 |
| 21   | 420                       | 03.34 | 388     | 19.51 | 416                        | 03.43 | 397     | 20.07 | 212                      | 05.08 | 196     | 19.51 | 408                      | 05.02 | 394     | 19.51 |
| 22   | 413                       | 04.02 | 386     | 19.42 | 410                        | 08.06 | 399     | 19.59 | 211                      | 03.56 | 193     | 11.12 | 406                      | 03.51 | 390     | 19.42 |
| 23   | 410                       | 03.52 | 383     | 19.50 | 408                        | 03.45 | 397     | 20.09 | 207                      | 04.37 | 191     | 11.06 | 411                      | 14.01 | 390     | 19.50 |
| 24   | 418                       | 08.04 | 390     | 21.04 | 412                        | 08.05 | 396     | 21.04 | 208                      | 08.03 | 193     | 21.15 | 407                      | 08.04 | 390     | 21.04 |
| 25   | 407                       | 04.17 | 378     | 14.54 | 408                        | 07.48 | 392     | 14.54 | 205                      | 04.19 | 184     | 15.03 | 403                      | 19.05 | 388     | 11.09 |
| 26   | 413                       | 08.06 | 385     | 15.10 | 407                        | 08.00 | 391     | 14.00 | 204                      | 08.00 | 194     | 01.00 | 405                      | 08.00 | 392     | 01.00 |
| 27   | 416                       | 19.04 | 391     | 11.44 | 413                        | 19.04 | 392     | 11.45 | 208                      | 06.05 | 199     | 19.53 | 407                      | 06.04 | 388     | 12.22 |
| 28   | 414                       | 03.48 | 387     | 19.41 | 412                        | 10.22 | 389     | 19.49 | 208                      | 03.02 | 190     | 19.46 | 406                      | 06.05 | 391     | 21.07 |
| 29   | 417                       | 08.03 | 389     | 15.17 | 411                        | 08.03 | 389     | 14.16 | 210                      | 03.02 | 194     | 14.50 | 408                      | 08.06 | 388     | 21.04 |
| 30   | 414                       | 08.08 | 393     | 20.14 | 407                        | 19.01 | 392     | 11.53 | 208                      | 03.09 | 196     | 20.15 | 409                      | 12.22 | 387     | 11.49 |
| 31   | 419                       | 03.45 | 390     | 20.11 | 410                        | 03.09 | 394     | 11.12 | 212                      | 03.28 | 197     | 12.34 | 407                      | 13.15 | 392     | 12.33 |
| Max  | 422                       |       | 409     |       | 416                        |       | 401     |       | 217                      |       | 199     |       | 416                      |       | 396     |       |
| Min  | 406                       |       | 371     |       | 404                        |       | 384     |       | 203                      |       | 184     |       | 400                      |       | 376     |       |

**V. Regional Power Supply Position**

(All Figs In MUs)

| Date           | Availability<br>(Gross)<br>MW | Peak Hrs.<br>Requirement<br>MW | Shortage/<br>Restriction<br>MW | Availability<br>(Gross)<br>MW | Off Peak Hrs.<br>Requirement<br>MW | Shortage/<br>Restriction*<br>MW | Regional<br>Availability<br>MU |
|----------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------------|---------------------------------|--------------------------------|
|                |                               |                                |                                |                               |                                    |                                 |                                |
| 01             | 21303                         | 22479                          | 1176                           | 20889                         | 21293                              | 404                             | 464                            |
| 02             | 21378                         | 22602                          | 1224                           | 20224                         | 22049                              | 1825                            | 473                            |
| 03             | 21576                         | 22831                          | 1255                           | 21818                         | 22940                              | 1122                            | 480                            |
| 04             | 21933                         | 23427                          | 1501                           | 21303                         | 23098                              | 1795                            | 473                            |
| 05             | 20664                         | 21871                          | 1207                           | 21251                         | 21503                              | 252                             | 448                            |
| 06             | 20331                         | 21293                          | 962                            | 19664                         | 20279                              | 615                             | 439                            |
| 07             | 21242                         | 22186                          | 944                            | 19815                         | 20100                              | 285                             | 459                            |
| 08             | 21386                         | 22330                          | 944                            | 20038                         | 20323                              | 285                             | 459                            |
| 09             | 20911                         | 21492                          | 581                            | 20424                         | 20709                              | 285                             | 446                            |
| 10             | 19055                         | 20143                          | 1088                           | 18567                         | 18881                              | 314                             | 423                            |
| 11             | 19119                         | 19679                          | 560                            | 17018                         | 17332                              | 314                             | 379                            |
| 12             | 18767                         | 19122                          | 355                            | 16614                         | 16622                              | 8                               | 387                            |
| 13             | 18880                         | 19425                          | 545                            | 17731                         | 17921                              | 190                             | 403                            |
| 14             | 20410                         | 21902                          | 1492                           | 17613                         | 18328                              | 715                             | 422                            |
| 15             | 20466                         | 21771                          | 1305                           | 20020                         | 20217                              | 197                             | 444                            |
| 16             | 20067                         | 21622                          | 1555                           | 19961                         | 20241                              | 280                             | 440                            |
| 17             | 20186                         | 21197                          | 1011                           | 19798                         | 20298                              | 500                             | 440                            |
| 18             | 20273                         | 21417                          | 1144                           | 19317                         | 20133                              | 816                             | 425                            |
| 19             | 19853                         | 21019                          | 1166                           | 18598                         | 19371                              | 773                             | 431                            |
| 20             | 19791                         | 20543                          | 752                            | 18888                         | 20083                              | 1195                            | 435                            |
| 21             | 18918                         | 19841                          | 923                            | 18211                         | 18496                              | 285                             | 403                            |
| 22             | 19320                         | 20790                          | 1470                           | 17792                         | 18547                              | 755                             | 416                            |
| 23             | 20195                         | 20853                          | 658                            | 18430                         | 18975                              | 545                             | 427                            |
| 24             | 20837                         | 21855                          | 1018                           | 19475                         | 20040                              | 565                             | 448                            |
| 25             | 21425                         | 22481                          | 1056                           | 20283                         | 20758                              | 475                             | 459                            |
| 26             | 20609                         | 21480                          | 871                            | 20895                         | 21420                              | 525                             | 456                            |
| 27             | 20378                         | 20877                          | 499                            | 19730                         | 20230                              | 500                             | 445                            |
| 28             | 19795                         | 20787                          | 992                            | 19188                         | 19378                              | 190                             | 439                            |
| 29             | 20858                         | 21709                          | 851                            | 19763                         | 20503                              | 740                             | 447                            |
| 30             | 21003                         | 21810                          | 807                            | 19712                         | 20432                              | 720                             | 445                            |
| 31             | 20741                         | 21679                          | 938                            | 19471                         | 19661                              | 190                             | 444                            |
| <b>Maximum</b> | 21933                         | 23427                          | 1555                           | 21818                         | 23098                              | 1825                            | 480                            |
| <b>Minimum</b> | 18767                         | 19122                          | 355                            | 16614                         | 16622                              | 8                               | 379                            |
| <b>Average</b> | 20376                         | 21371                          | 995                            | 19436                         | 20005                              | 570                             | 439                            |

**VI. Daily Peak/Off-Peak Demand Met By Constituents (Sheet 1 of 2)**

| State   | Punjab |          | Haryana |          | Rajasthan |          | Delhi |          | Uttar Pradesh |          |
|---------|--------|----------|---------|----------|-----------|----------|-------|----------|---------------|----------|
| Date    | Peak   | Off Peak | Peak    | Off Peak | Peak      | Off Peak | Peak  | Off Peak | Peak          | Off Peak |
| 01      | 4516   | 4822     | 2734    | 2891     | 3065      | 2990     | 2859  | 2695     | 4560          | 5215     |
| 02      | 4494   | 4859     | 2842    | 2777     | 3221      | 2767     | 3027  | 2660     | 4654          | 4995     |
| 03      | 4552   | 4821     | 2878    | 3087     | 2866      | 2565     | 3077  | 2768     | 4920          | 5380     |
| 04      | 4724   | 4675     | 2976    | 2978     | 2914      | 2776     | 3133  | 2795     | 5007          | 5017     |
| 05      | 4450   | 5054     | 2721    | 2817     | 2775      | 2661     | 2827  | 2799     | 4685          | 5498     |
| 06      | 4337   | 4325     | 2543    | 2688     | 2974      | 2491     | 2646  | 2468     | 4542          | 4921     |
| 07      | 4528   | 4942     | 2721    | 2761     | 2794      | 2427     | 2858  | 2463     | 4181          | 5223     |
| 08      | 4528   | 4942     | 2721    | 2761     | 2794      | 2427     | 2858  | 2463     | 4181          | 5223     |
| 09      | 4497   | 5186     | 2392    | 2912     | 2411      | 2373     | 2682  | 2508     | 4141          | 4677     |
| 10      | 4061   | 4855     | 2311    | 2474     | 2202      | 1759     | 2694  | 2097     | 4073          | 4743     |
| 11      | 5100   | 4772     | 2136    | 1868     | 2428      | 1911     | 2190  | 1717     | 4253          | 4185     |
| 12      | 4131   | 5130     | 2096    | 1679     | 2160      | 1805     | 2386  | 1539     | 4796          | 4364     |
| 13      | 4141   | 4809     | 2286    | 1986     | 2191      | 2193     | 2438  | 1775     | 4464          | 4751     |
| 14      | 4656   | 4599     | 2523    | 2090     | 2575      | 2090     | 2733  | 1991     | 4408          | 4419     |
| 15      | 4565   | 5223     | 2505    | 2542     | 1971      | 1798     | 2695  | 2214     | 4610          | 4827     |
| 16      | 4474   | 5306     | 2488    | 2782     | 2277      | 1981     | 2758  | 2178     | 4175          | 5178     |
| 17      | 4131   | 5259     | 2597    | 2598     | 2420      | 2252     | 2841  | 2325     | 4261          | 4744     |
| 18      | 3879   | 4275     | 2609    | 2721     | 2969      | 2374     | 2745  | 2258     | 4593          | 5071     |
| 19      | 4199   | 4089     | 2569    | 2593     | 2889      | 2200     | 2671  | 2182     | 4358          | 5373     |
| 20      | 4664   | 4396     | 2524    | 2607     | 2370      | 1955     | 2626  | 2385     | 4601          | 4966     |
| 21      | 4664   | 4396     | 2265    | 2477     | 2495      | 1761     | 2611  | 2353     | 4612          | 4848     |
| 22      | 4460   | 4197     | 2390    | 2166     | 2471      | 2200     | 2794  | 2149     | 4116          | 4943     |
| 23      | 4587   | 4614     | 2650    | 2451     | 2674      | 2387     | 2807  | 2195     | 4415          | 4685     |
| 24      | 4656   | 5003     | 2817    | 2712     | 2808      | 2272     | 2983  | 2494     | 5111          | 5004     |
| 25      | 4937   | 5142     | 2885    | 2824     | 3073      | 2282     | 2987  | 2505     | 4266          | 4972     |
| 26      | 4492   | 5484     | 2875    | 3025     | 2832      | 2511     | 3014  | 2672     | 4068          | 4815     |
| 27      | 4609   | 5038     | 2469    | 2809     | 2236      | 2083     | 2664  | 2483     | 4321          | 4552     |
| 28      | 4575   | 5049     | 2564    | 2692     | 2698      | 2307     | 2630  | 2448     | 4426          | 4778     |
| 29      | 4590   | 5151     | 2710    | 2663     | 2782      | 2231     | 2880  | 2417     | 4545          | 4929     |
| 30      | 4777   | 5343     | 2918    | 2772     | 2694      | 2111     | 2721  | 2352     | 4504          | 4925     |
| 31      | 4536   | 5137     | 2605    | 2649     | 2741      | 2126     | 2860  | 2137     | 4328          | 4869     |
| Maximum | 5100   | 5484     | 2976    | 3087     | 3221      | 2990     | 3133  | 2799     | 5111          | 5498     |
| Minimum | 3879   | 4089     | 2096    | 1679     | 1971      | 1759     | 2190  | 1539     | 4068          | 4185     |
| Average | 4500   | 4868     | 2591    | 2608     | 2638      | 2260     | 2764  | 2338     | 4457          | 4906     |

**VI. Daily Peak/Off-Peak demand Met By Constituents (Sheet 2 of 2)**

| State   | Uttaranchal |          | Chandigarh |          | Himachal Pradesh |          | Jammu & Kashmir |          |
|---------|-------------|----------|------------|----------|------------------|----------|-----------------|----------|
| Date    | Peak        | Off Peak | Peak       | Off Peak | Peak             | Off Peak | Peak            | Off Peak |
| 01      | 588         | 445      | 173        | 126      | 421              | 373      | 739             | 554      |
| 02      | 621         | 469      | 176        | 132      | 438              | 380      | 736             | 526      |
| 03      | 619         | 473      | 134        | 144      | 439              | 378      | 888             | 818      |
| 04      | 609         | 489      | 185        | 148      | 420              | 364      | 842             | 555      |
| 05      | 521         | 338      | 166        | 141      | 444              | 412      | 897             | 590      |
| 06      | 545         | 415      | 149        | 126      | 395              | 382      | 810             | 582      |
| 07      | 599         | 496      | 178        | 140      | 446              | 368      | 870             | 619      |
| 08      | 599         | 496      | 178        | 140      | 446              | 368      | 870             | 625      |
| 09      | 625         | 510      | 164        | 138      | 447              | 356      | 925             | 610      |
| 10      | 604         | 442      | 153        | 110      | 428              | 357      | 838             | 554      |
| 11      | 529         | 416      | 158        | 100      | 452              | 340      | 855             | 582      |
| 12      | 538         | 324      | 153        | 95       | 440              | 369      | 843             | 582      |
| 13      | 580         | 416      | 138        | 110      | 407              | 367      | 870             | 519      |
| 14      | 613         | 446      | 172        | 110      | 450              | 409      | 966             | 579      |
| 15      | 596         | 429      | 175        | 127      | 447              | 403      | 860             | 598      |
| 16      | 647         | 473      | 174        | 126      | 393              | 380      | 902             | 482      |
| 17      | 655         | 457      | 162        | 140      | 453              | 358      | 784             | 768      |
| 18      | 639         | 493      | 167        | 119      | 462              | 352      | 886             | 748      |
| 19      | 636         | 493      | 173        | 117      | 452              | 370      | 879             | 729      |
| 20      | 594         | 474      | 160        | 132      | 439              | 366      | 878             | 719      |
| 21      | 610         | 372      | 160        | 120      | 468              | 372      | 855             | 471      |
| 22      | 610         | 378      | 168        | 118      | 437              | 362      | 855             | 661      |
| 23      | 644         | 477      | 175        | 125      | 478              | 374      | 745             | 587      |
| 24      | 620         | 483      | 179        | 135      | 491              | 358      | 867             | 562      |
| 25      | 638         | 516      | 183        | 131      | 485              | 379      | 903             | 590      |
| 26      | 668         | 494      | 184        | 149      | 478              | 382      | 887             | 639      |
| 27      | 624         | 509      | 158        | 137      | 478              | 387      | 888             | 565      |
| 28      | 629         | 474      | 158        | 125      | 473              | 384      | 891             | 581      |
| 29      | 615         | 510      | 180        | 126      | 467              | 359      | 762             | 582      |
| 30      | 572         | 469      | 180        | 134      | 489              | 378      | 748             | 599      |
| 31      | 574         | 453      | 164        | 129      | 432              | 378      | 883             | 567      |
| Maximum | 668         | 516      | 185        | 149      | 491              | 412      | 966             | 818      |
| Minimum | 521         | 324      | 134        | 95       | 393              | 340      | 736             | 471      |
| Average | 605         | 456      | 167        | 127      | 448              | 373      | 852             | 605      |

**VII Daily Energy Consumption By Constituents**

(All Figs In MUs)

| Date        | Punjab   | Haryana  | Rajasthan | Delhi    | UP       | Uttaranchal | Chandigarh | HP      | J & K   | Total     |
|-------------|----------|----------|-----------|----------|----------|-------------|------------|---------|---------|-----------|
| 01          | 106.509  | 64.324   | 67.333    | 67.182   | 109.563  | 11.253      | 3.689      | 9.589   | 18.761  | 457.257   |
| 02          | 107.853  | 63.427   | 69.934    | 67.485   | 107.048  | 11.163      | 3.813      | 9.888   | 19.129  | 460.941   |
| 03          | 110.193  | 66.964   | 61.666    | 69.720   | 109.646  | 11.630      | 3.958      | 9.796   | 19.172  | 462.332   |
| 04          | 106.756  | 66.810   | 60.837    | 70.595   | 116.516  | 11.523      | 4.089      | 9.344   | 19.076  | 466.081   |
| 05          | 104.333  | 58.949   | 58.305    | 59.342   | 118.726  | 9.279       | 3.390      | 9.272   | 18.430  | 441.079   |
| 06          | 103.948  | 63.688   | 55.957    | 56.238   | 106.849  | 9.855       | 3.025      | 9.200   | 18.490  | 426.522   |
| 07          | 112.621  | 64.517   | 57.105    | 61.974   | 106.812  | 11.383      | 3.857      | 9.383   | 18.394  | 447.817   |
| 08          | 112.621  | 64.517   | 57.449    | 64.953   | 106.214  | 11.654      | 3.857      | 9.385   | 18.394  | 448.424   |
| 09          | 114.341  | 62.915   | 53.516    | 61.560   | 98.594   | 11.462      | 3.574      | 9.260   | 17.743  | 433.390   |
| 10          | 108.543  | 56.545   | 48.034    | 55.093   | 98.181   | 10.429      | 3.361      | 9.109   | 18.334  | 407.999   |
| 11          | 107.345  | 43.402   | 47.504    | 42.892   | 93.916   | 9.605       | 3.177      | 9.720   | 19.271  | 377.554   |
| 12          | 106.732  | 44.632   | 40.821    | 46.699   | 98.635   | 9.907       | 3.121      | 9.524   | 18.615  | 378.272   |
| 13          | 104.303  | 47.173   | 48.546    | 48.982   | 103.748  | 10.123      | 2.718      | 10.376  | 19.287  | 395.889   |
| 14          | 108.947  | 57.134   | 49.710    | 56.641   | 99.162   | 10.846      | 3.482      | 9.073   | 19.771  | 415.929   |
| 15          | 113.375  | 58.988   | 44.134    | 59.493   | 103.964  | 11.158      | 3.659      | 9.540   | 19.379  | 424.204   |
| 16          | 113.633  | 59.753   | 48.206    | 60.496   | 102.903  | 11.746      | 3.705      | 9.662   | 17.884  | 428.113   |
| 17          | 106.624  | 59.041   | 55.477    | 61.805   | 105.939  | 11.900      | 3.577      | 9.414   | 17.506  | 431.176   |
| 18          | 96.560   | 56.702   | 55.392    | 59.185   | 105.524  | 12.013      | 3.436      | 9.669   | 18.050  | 416.331   |
| 19          | 100.871  | 59.998   | 62.354    | 59.130   | 106.652  | 11.705      | 3.416      | 9.754   | 19.448  | 433.576   |
| 20          | 108.648  | 60.505   | 53.182    | 60.518   | 104.842  | 11.452      | 3.188      | 9.647   | 17.035  | 428.480   |
| 21          | 100.662  | 47.743   | 51.269    | 57.413   | 102.862  | 10.686      | 3.363      | 9.494   | 16.704  | 400.103   |
| 22          | 101.850  | 50.536   | 52.090    | 59.530   | 100.522  | 10.998      | 3.534      | 9.291   | 18.682  | 406.998   |
| 23          | 107.407  | 55.431   | 53.921    | 61.238   | 102.210  | 10.981      | 3.682      | 9.767   | 16.142  | 421.524   |
| 24          | 109.608  | 59.852   | 54.862    | 64.211   | 113.326  | 11.868      | 3.669      | 9.983   | 17.345  | 444.242   |
| 25          | 113.862  | 62.338   | 56.531    | 66.097   | 111.039  | 11.993      | 3.938      | 10.011  | 18.797  | 453.858   |
| 26          | 115.523  | 62.001   | 58.778    | 66.081   | 105.040  | 11.878      | 3.773      | 9.900   | 18.394  | 450.845   |
| 27          | 115.209  | 60.204   | 55.555    | 60.722   | 96.890   | 11.719      | 3.383      | 9.931   | 18.035  | 431.697   |
| 28          | 113.864  | 57.979   | 51.134    | 61.892   | 101.581  | 11.715      | 3.682      | 12.982  | 18.272  | 431.832   |
| 29          | 114.982  | 61.246   | 50.898    | 62.362   | 107.163  | 11.676      | 3.759      | 11.552  | 17.438  | 441.417   |
| 30          | 115.210  | 63.119   | 51.196    | 58.990   | 106.053  | 11.289      | 3.742      | 11.817  | 17.975  | 442.279   |
| 31          | 113.661  | 59.885   | 53.389    | 59.166   | 103.378  | 10.451      | 3.420      | 11.271  | 17.747  | 434.453   |
| Maximum     | 115.523  | 66.964   | 69.934    | 70.595   | 118.726  | 12.013      | 4.089      | 12.982  | 19.771  | 466.081   |
| Minimum     | 96.560   | 43.402   | 40.821    | 42.892   | 93.916   | 9.279       | 2.718      | 9.073   | 16.142  | 377.554   |
| Average     | 108.922  | 58.720   | 54.358    | 60.248   | 104.951  | 11.140      | 3.550      | 9.890   | 18.313  | 430.342   |
| Month Total | 3376.596 | 1820.320 | 1685.086  | 1867.685 | 3253.496 | 345.340     | 110.037    | 306.604 | 567.703 | 13340.614 |

## VIII. Schedule VS Actual Drawals of Northern Regional Constituents (Sheet 1 of 2)

| Date            | Punjab          |                 | Haryana         |                 | Rajasthan      |                | Delhi           |                 | Uttar Pradesh   |                 | Uttaranchal    |                |
|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
|                 | Schedule        | Actual          | Schedule        | Actual          | Schedule       | Actual         | Schedule        | Actual          | Schedule        | Actual          | Schedule       | Actual         |
| 1-Jul-2003      | 50066           | 50204           | 34857           | 37700           | 35365          | 39860          | 48169           | 42722           | 48780           | 49005           | -152           | 511            |
| 2-Jul-2003      | 50689           | 52446           | 35517           | 38581           | 35701          | 37780          | 51331           | 42546           | 48671           | 52835           | -266           | -908           |
| 3-Jul-2003      | 52292           | 55826           | 35874           | 38991           | 34939          | 35389          | 50347           | 44032           | 47582           | 52969           | -80            | -516           |
| 4-Jul-2003      | 50276           | 50648           | 37126           | 39581           | 34398          | 34008          | 47875           | 44398           | 48858           | 52224           | -18            | -1428          |
| 5-Jul-2003      | 49634           | 54536           | 35574           | 36094           | 33474          | 26152          | 43352           | 37613           | 49274           | 54016           | -894           | -124           |
| 6-Jul-2003      | 48787           | 58525           | 34619           | 38470           | 33413          | 27501          | 43052           | 36075           | 49291           | 49990           | -558           | 193            |
| 7-Jul-2003      | 50384           | 54188           | 34493           | 38295           | 32549          | 26428          | 44025           | 41197           | 46332           | 52016           | -1366          | -1058          |
| 8-Jul-2003      | 53535           | 54050           | 35467           | 39988           | 34464          | 27171          | 46152           | 42874           | 48699           | 54111           | -1118          | -1278          |
| 9-Jul-2003      | 52376           | 57956           | 35227           | 39882           | 33286          | 26629          | 46613           | 39206           | 47828           | 47613           | -1389          | -2709          |
| 10-Jul-2003     | 49568           | 60518           | 31838           | 33107           | 29707          | 18726          | 42833           | 32869           | 44472           | 45509           | -2192          | -3707          |
| 11-Jul-2003     | 48017           | 60370           | 26567           | 26598           | 25903          | 22455          | 38781           | 26542           | 40603           | 35109           | -2656          | -3330          |
| 12-Jul-2003     | 48288           | 58516           | 28739           | 31619           | 29082          | 29799          | 33071           | 29837           | 38811           | 34622           | -144           | -4564          |
| 13-Jul-2003     | 49504           | 54589           | 32059           | 36914           | 30527          | 31542          | 34130           | 30956           | 41319           | 41804           | 371            | -3627          |
| 14-Jul-2003     | 50557           | 54282           | 32564           | 36737           | 31460          | 32575          | 37047           | 37772           | 41918           | 45563           | -54            | -989           |
| 15-Jul-2003     | 51610           | 56580           | 34454           | 39874           | 33388          | 31724          | 44727           | 39085           | 44049           | 47505           | 119            | -3450          |
| 16-Jul-2003     | 51339           | 54394           | 35306           | 38524           | 32815          | 31500          | 44908           | 40453           | 48275           | 51536           | -543           | -2079          |
| 17-Jul-2003     | 50877           | 53119           | 34404           | 36138           | 32081          | 31457          | 45757           | 40055           | 48337           | 55395           | -302           | -1360          |
| 18-Jul-2003     | 49428           | 50866           | 34202           | 36399           | 31512          | 31890          | 45092           | 36322           | 48006           | 52111           | -434           | -958           |
| 19-Jul-2003     | 51218           | 53401           | 33296           | 38663           | 31466          | 30112          | 45864           | 37211           | 47189           | 51648           | -158           | -767           |
| 20-Jul-2003     | 51162           | 53635           | 33495           | 41073           | 30147          | 27782          | 45902           | 35612           | 44194           | 48164           | -769           | -1165          |
| 21-Jul-2003     | 51381           | 52278           | 31964           | 31750           | 28058          | 24599          | 44160           | 36429           | 43540           | 49135           | -1428          | -1902          |
| 22-Jul-2003     | 50482           | 49500           | 31358           | 35328           | 29341          | 29437          | 39808           | 40831           | 44423           | 51457           | 437            | -1730          |
| 23-Jul-2003     | 48971           | 46542           | 30448           | 35106           | 31143          | 29716          | 43203           | 40516           | 44663           | 51311           | 566            | -1450          |
| 24-Jul-2003     | 51799           | 52881           | 32458           | 34596           | 31688          | 30465          | 46402           | 40376           | 45661           | 55805           | 253            | -1320          |
| 25-Jul-2003     | 51576           | 52395           | 33308           | 36841           | 32015          | 30806          | 43666           | 41040           | 46616           | 56135           | 541            | -555           |
| 26-Jul-2003     | 50537           | 54131           | 33455           | 37126           | 30723          | 31515          | 44598           | 40369           | 46032           | 47743           | 169            | -1824          |
| 27-Jul-2003     | 47834           | 54711           | 33338           | 37149           | 28926          | 29221          | 41448           | 35770           | 45719           | 45877           | 166            | 864            |
| 28-Jul-2003     | 47079           | 51446           | 30963           | 36347           | 27424          | 25518          | 41523           | 36060           | 44955           | 48931           | -478           | -1141          |
| 29-Jul-2003     | 47348           | 51232           | 33082           | 40364           | 26122          | 20629          | 40324           | 35913           | 45557           | 52514           | -181           | -1114          |
| 30-Jul-2003     | 48599           | 54782           | 32623           | 37497           | 25492          | 27473          | 41529           | 32093           | 44512           | 51192           | -567           | -2596          |
| 31-Jul-2003     | 49747           | 56288           | 31456           | 36213           | 26374          | 25281          | 40746           | 32584           | 44524           | 50357           | -48            | -3422          |
| <b>Total MU</b> | <b>1554.960</b> | <b>1674.835</b> | <b>1030.131</b> | <b>1141.545</b> | <b>962.983</b> | <b>905.140</b> | <b>1346.435</b> | <b>1169.358</b> | <b>1418.690</b> | <b>1534.202</b> | <b>-13.173</b> | <b>-49.503</b> |
| <b>Max. MWH</b> | <b>53535</b>    | <b>60518</b>    | <b>37126</b>    | <b>41073</b>    | <b>35701</b>   | <b>39860</b>   | <b>51331</b>    | <b>44398</b>    | <b>49291</b>    | <b>56135</b>    | <b>566</b>     | <b>864</b>     |
| <b>Min MWH</b>  | <b>47079</b>    | <b>46542</b>    | <b>26567</b>    | <b>26598</b>    | <b>25492</b>   | <b>18726</b>   | <b>33071</b>    | <b>26542</b>    | <b>38811</b>    | <b>34622</b>    | <b>-2656</b>   | <b>-4564</b>   |
| <b>Avg. MWH</b> | <b>50160</b>    | <b>54027</b>    | <b>33230</b>    | <b>36824</b>    | <b>31064</b>   | <b>29198</b>   | <b>43433</b>    | <b>37721</b>    | <b>45764</b>    | <b>49490</b>    | <b>-425</b>    | <b>-1597</b>   |

**VIII. Schedule vs Actual Drawals of Northern Regional Constituents (Sheet 2 of 2)**

| Date            | Himachal Pradesh |                 | Jammu & Kashmir |                | Chandigarh     |                | NFF           |              | Railways      |               |
|-----------------|------------------|-----------------|-----------------|----------------|----------------|----------------|---------------|--------------|---------------|---------------|
|                 | Schedule         | Actual          | Schedule        | Actual         | Schedule       | Actual         | Schedule      | Actual       | Schedule      | Actual        |
| 1-Jul-2003      | -3246            | -3589           | 14261           | 13613          | 4329           | 3900           | 480           | 346          | 1013          | 1462          |
| 2-Jul-2003      | -2583            | -895            | 14248           | 13716          | 4330           | 4120           | 480           | 364          | 1452          | 1471          |
| 3-Jul-2003      | -3902            | -3294           | 13974           | 13847          | 4306           | 4310           | 480           | 364          | 1613          | 1405          |
| 4-Jul-2003      | -2956            | -3155           | 14305           | 13409          | 4367           | 4440           | 480           | 366          | 1677          | 1476          |
| 5-Jul-2003      | -3143            | -4268           | 14386           | 12888          | 4425           | 3715           | 480           | 358          | 1733          | 1504          |
| 6-Jul-2003      | -3202            | -4152           | 14466           | 12989          | 4378           | 3286           | 480           | 362          | 1209          | 1551          |
| 7-Jul-2003      | -3577            | -2589           | 13960           | 12269          | 4346           | 3934           | 480           | 240          | 1052          | 1564          |
| 8-Jul-2003      | -3419            | -3750           | 14309           | 13332          | 4413           | 4230           | 480           | 37           | 927           | 1547          |
| 9-Jul-2003      | -3677            | -4256           | 14146           | 11955          | 4406           | 3953           | 480           | 181          | 1423          | 1501          |
| 10-Jul-2003     | -3456            | -4544           | 13979           | 12567          | 4335           | 3675           | 480           | 196          | 1018          | 1420          |
| 11-Jul-2003     | -3600            | -3988           | 13153           | 13662          | 4199           | 3513           | 480           | 172          | 980           | 1306          |
| 12-Jul-2003     | 1111             | -4320           | 13235           | 13350          | 4216           | 3398           | 480           | 189          | 952           | 1326          |
| 13-Jul-2003     | 1351             | -3985           | 13925           | 12175          | 4279           | 2957           | 480           | 186          | 1061          | 1540          |
| 14-Jul-2003     | 1279             | -5170           | 13877           | 13800          | 4277           | 3752           | 480           | 176          | 973           | 1566          |
| 15-Jul-2003     | -2159            | -4105           | 14265           | 13694          | 4382           | 3957           | 480           | 186          | 1222          | 1522          |
| 16-Jul-2003     | -1998            | -4191           | 13822           | 12762          | 4136           | 4054           | 480           | 169          | 1151          | 1675          |
| 17-Jul-2003     | -2093            | -4917           | 13995           | 13174          | 4157           | 3920           | 480           | 167          | 1147          | 1458          |
| 18-Jul-2003     | -924             | -4939           | 13783           | 14160          | 4186           | 3715           | 480           | 164          | 1230          | 1578          |
| 19-Jul-2003     | -2064            | -4752           | 13568           | 13542          | 4148           | 3681           | 480           | 163          | 1005          | 1474          |
| 20-Jul-2003     | -1881            | -4522           | 13609           | 12461          | 4119           | 3567           | 480           | 162          | 911           | 1607          |
| 21-Jul-2003     | -1576            | -4948           | 13400           | 12084          | 4112           | 3695           | 480           | 172          | 1038          | 1532          |
| 22-Jul-2003     | 335              | -5190           | 13068           | 13721          | 4051           | 3845           | 480           | 151          | 1119          | 1463          |
| 23-Jul-2003     | -2387            | -4912           | 9929            | 13439          | 4046           | 4060           | 480           | 158          | 955           | 1357          |
| 24-Jul-2003     | -2547            | -4801           | 13563           | 12957          | 4144           | 4022           | 480           | 171          | 1131          | 1284          |
| 25-Jul-2003     | -811             | -4704           | 13654           | 14216          | 4145           | 4284           | 480           | 172          | 1247          | 1295          |
| 26-Jul-2003     | -1929            | -4483           | 13420           | 13887          | 4134           | 4169           | 480           | 172          | 1207          | 1498          |
| 27-Jul-2003     | 2395             | -4643           | 13192           | 13620          | 4085           | 3811           | 480           | 163          | 1106          | 1423          |
| 28-Jul-2003     | 2068             | -1184           | 12651           | 13504          | 4101           | 4204           | 480           | 162          | 1002          | 1479          |
| 29-Jul-2003     | 2137             | -4267           | 13087           | 13268          | 4109           | 4172           | 480           | 122          | 1196          | 1551          |
| 30-Jul-2003     | 643              | -4298           | 12913           | 13433          | 4079           | 4177           | 480           | -76          | 957           | 1591          |
| 31-Jul-2003     | -34              | -4919           | 12879           | 14015          | 4105           | 3797           | 480           | 135          | 942           | 1525          |
| <b>Total MU</b> | <b>-45.845</b>   | <b>-127.730</b> | <b>421.022</b>  | <b>411.509</b> | <b>130.845</b> | <b>120.313</b> | <b>14.880</b> | <b>6.050</b> | <b>35.649</b> | <b>45.951</b> |
| <b>Max. MWH</b> | <b>2395</b>      | <b>-895</b>     | <b>14466</b>    | <b>14216</b>   | <b>4425</b>    | <b>4440</b>    | <b>480</b>    | <b>366</b>   | <b>1733</b>   | <b>1675</b>   |
| <b>Min MWH</b>  | <b>-3902</b>     | <b>-5190</b>    | <b>9929</b>     | <b>11955</b>   | <b>4046</b>    | <b>2957</b>    | <b>480</b>    | <b>-76</b>   | <b>911</b>    | <b>1284</b>   |
| <b>Avg. MWH</b> | <b>-1479</b>     | <b>-4120</b>    | <b>13581</b>    | <b>13274</b>   | <b>4221</b>    | <b>3881</b>    | <b>480</b>    | <b>195</b>   | <b>1150</b>   | <b>1482</b>   |

# IX Schedule vs Actual Injection of ISGS (Sheet 1 of 3)

| Date            | Singrauli       |                 | Rihand         |                | Dadri(T)       |                | Unchahar-I     |                | Unchahar-II    |                | Dadri GPS      |                |
|-----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                 | Schedule        | Actual          | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         |
| 1-Jul-2003      | 44040           | 44144           | 21133          | 21203          | 15804          | 16629          | 9085           | 9166           | 8985           | 9107           | 12020          | 12551          |
| 2-Jul-2003      | 44040           | 44126           | 21338          | 21387          | 15549          | 15996          | 9094           | 9177           | 8968           | 9002           | 12769          | 12973          |
| 3-Jul-2003      | 44040           | 44132           | 21820          | 21897          | 17222          | 17894          | 9116           | 9136           | 4479           | 4499           | 13133          | 12985          |
| 4-Jul-2003      | 44040           | 44144           | 21820          | 21889          | 18264          | 18343          | 9140           | 9126           | 4484           | 4542           | 13351          | 13096          |
| 5-Jul-2003      | 42702           | 42278           | 20920          | 20621          | 13892          | 14054          | 8693           | 8554           | 5930           | 5970           | 12068          | 11708          |
| 6-Jul-2003      | 43296           | 43415           | 21200          | 21391          | 13344          | 13548          | 7439           | 7453           | 8570           | 8564           | 11994          | 12244          |
| 7-Jul-2003      | 43296           | 43709           | 21520          | 21673          | 13344          | 13648          | 4524           | 4526           | 8723           | 8832           | 12238          | 12328          |
| 8-Jul-2003      | 43479           | 43859           | 21585          | 21733          | 14221          | 14549          | 8057           | 8020           | 8791           | 8990           | 12219          | 12620          |
| 9-Jul-2003      | 43429           | 43500           | 19976          | 19345          | 13676          | 13622          | 8899           | 8884           | 8722           | 8677           | 11741          | 11809          |
| 10-Jul-2003     | 38952           | 38652           | 20144          | 19601          | 12101          | 12093          | 8305           | 8114           | 7888           | 7788           | 7168           | 7223           |
| 11-Jul-2003     | 28403           | 28274           | 18454          | 18468          | 9914           | 9824           | 7787           | 7630           | 7344           | 7346           | 6608           | 6536           |
| 12-Jul-2003     | 31229           | 31369           | 19804          | 20436          | 10425          | 10434          | 7691           | 7852           | 7396           | 7282           | 7493           | 7429           |
| 13-Jul-2003     | 32816           | 32885           | 21118          | 21330          | 10185          | 10572          | 7957           | 8025           | 8016           | 8028           | 11436          | 11558          |
| 14-Jul-2003     | 37317           | 37492           | 21266          | 21848          | 11953          | 12573          | 7994           | 8557           | 4555           | 4686           | 11387          | 12842          |
| 15-Jul-2003     | 43732           | 43741           | 21474          | 21585          | 14705          | 15525          | 7722           | 7797           | 8133           | 8195           | 11348          | 11420          |
| 16-Jul-2003     | 43919           | 44088           | 21551          | 21703          | 14677          | 14991          | 9012           | 9070           | 8993           | 9051           | 9078           | 8856           |
| 17-Jul-2003     | 44040           | 44161           | 21600          | 21665          | 14677          | 15320          | 9062           | 9071           | 8997           | 9027           | 9082           | 8977           |
| 18-Jul-2003     | 43840           | 43991           | 21488          | 21525          | 14677          | 14629          | 8874           | 8880           | 8699           | 8734           | 8383           | 8101           |
| 19-Jul-2003     | 43621           | 43767           | 19064          | 18869          | 14768          | 14774          | 8938           | 9005           | 8691           | 8865           | 8767           | 8831           |
| 20-Jul-2003     | 33249           | 33293           | 21600          | 21623          | 14768          | 15098          | 8986           | 8961           | 8898           | 8869           | 8808           | 8594           |
| 21-Jul-2003     | 31673           | 31637           | 20741          | 20670          | 14716          | 14579          | 8690           | 8506           | 8503           | 8363           | 8323           | 8130           |
| 22-Jul-2003     | 33360           | 33443           | 21285          | 21714          | 15018          | 15182          | 8752           | 8881           | 8579           | 8769           | 8656           | 8686           |
| 23-Jul-2003     | 33290           | 33447           | 21622          | 21859          | 16263          | 16609          | 8951           | 9086           | 8916           | 9042           | 8874           | 8820           |
| 24-Jul-2003     | 33244           | 33357           | 21584          | 21701          | 16709          | 16866          | 9012           | 9042           | 8944           | 8986           | 9410           | 9162           |
| 25-Jul-2003     | 33360           | 33490           | 21660          | 21841          | 16675          | 17400          | 9087           | 9167           | 9028           | 9077           | 10920          | 10811          |
| 26-Jul-2003     | 33285           | 33414           | 21752          | 21679          | 16453          | 16472          | 9005           | 9001           | 9026           | 8982           | 10131          | 10045          |
| 27-Jul-2003     | 33264           | 33266           | 21553          | 21541          | 15087          | 14951          | 8889           | 8822           | 8728           | 8692           | 9562           | 9303           |
| 28-Jul-2003     | 33088           | 33006           | 21466          | 21414          | 14934          | 14884          | 8573           | 8570           | 8298           | 8449           | 8680           | 8575           |
| 29-Jul-2003     | 33360           | 33387           | 21420          | 21547          | 14352          | 14510          | 8532           | 8191           | 8736           | 8734           | 9007           | 8968           |
| 30-Jul-2003     | 33360           | 33419           | 21420          | 21614          | 14762          | 14750          | 8855           | 8927           | 8508           | 8242           | 8796           | 8778           |
| 31-Jul-2003     | 33360           | 33319           | 21640          | 21422          | 14313          | 14270          | 8728           | 8717           | 8593           | 8613           | 8679           | 8684           |
| <b>Total MU</b> | <b>1178.124</b> | <b>1180.205</b> | <b>655.018</b> | <b>656.794</b> | <b>447.448</b> | <b>454.589</b> | <b>263.449</b> | <b>263.914</b> | <b>251.121</b> | <b>252.003</b> | <b>312.129</b> | <b>312.643</b> |
| <b>Max. MWH</b> | <b>44040</b>    | <b>44161</b>    | <b>21820</b>   | <b>21897</b>   | <b>18264</b>   | <b>18343</b>   | <b>9140</b>    | <b>9177</b>    | <b>9028</b>    | <b>9107</b>    | <b>13351</b>   | <b>13096</b>   |
| <b>Min MWH</b>  | <b>28403</b>    | <b>28274</b>    | <b>18454</b>   | <b>18468</b>   | <b>9914</b>    | <b>9824</b>    | <b>4524</b>    | <b>4526</b>    | <b>4479</b>    | <b>4499</b>    | <b>6608</b>    | <b>6536</b>    |
| <b>Avg. MWH</b> | <b>38004</b>    | <b>38071</b>    | <b>21130</b>   | <b>21187</b>   | <b>14434</b>   | <b>14664</b>   | <b>8498</b>    | <b>8513</b>    | <b>8101</b>    | <b>8129</b>    | <b>10069</b>   | <b>10085</b>   |

**IX. Schedule vs Actual Injection of ISGS (Sheet 2 of 3)**

| Date            | Anta GPS       |                | Auraiya GPS    |                | NAPS           |                | RAPS-B         |                | Bairasiul     |               | Salal          |                |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|----------------|
|                 | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule      | Actual        | Schedule       | Actual         |
| 1-Jul-2003      | 7784           | 8072           | 12125          | 12762          | 4680           | 4419           | 9600           | 9238           | 1935          | 2017          | 16320          | 16601          |
| 2-Jul-2003      | 8116           | 8293           | 12657          | 13317          | 4608           | 4384           | 9600           | 9463           | 1890          | 1997          | 16403          | 16616          |
| 3-Jul-2003      | 8384           | 8590           | 12788          | 13657          | 4560           | 4372           | 8800           | 8542           | 1950          | 2075          | 16440          | 16631          |
| 4-Jul-2003      | 8362           | 8656           | 13190          | 13800          | 8720           | 7037           | 4800           | 4356           | 2025          | 2116          | 16440          | 16613          |
| 5-Jul-2003      | 7774           | 7444           | 11487          | 11343          | 9000           | 9367           | 4800           | 4320           | 2670          | 2714          | 16368          | 16527          |
| 6-Jul-2003      | 8234           | 8417           | 11609          | 11780          | 8778           | 8944           | 5100           | 4278           | 2190          | 2246          | 16114          | 16324          |
| 7-Jul-2003      | 8422           | 8639           | 11903          | 11953          | 4776           | 4593           | 7646           | 7439           | 2355          | 2433          | 16118          | 16472          |
| 8-Jul-2003      | 8551           | 8777           | 12090          | 12307          | 4896           | 4683           | 9600           | 9412           | 2265          | 2321          | 16272          | 16528          |
| 9-Jul-2003      | 8382           | 8362           | 11430          | 11378          | 4848           | 4776           | 8450           | 8220           | 2066          | 2102          | 16272          | 16515          |
| 10-Jul-2003     | 6832           | 6825           | 10395          | 10282          | 4872           | 4795           | 4800           | 4552           | 1838          | 1854          | 16272          | 16478          |
| 11-Jul-2003     | 6272           | 6418           | 10136          | 9909           | 4920           | 4760           | 4800           | 4535           | 2490          | 2507          | 14387          | 14557          |
| 12-Jul-2003     | 6942           | 7302           | 8672           | 8639           | 4944           | 4785           | 4800           | 4621           | 1988          | 2028          | 16212          | 16377          |
| 13-Jul-2003     | 7499           | 7776           | 9425           | 9435           | 4944           | 4738           | 4800           | 4591           | 2216          | 2271          | 16145          | 16313          |
| 14-Jul-2003     | 8204           | 8865           | 12762          | 13048          | 4944           | 4723           | 4800           | 4547           | 2104          | 2146          | 16345          | 16512          |
| 15-Jul-2003     | 8399           | 8441           | 11795          | 12123          | 4944           | 4746           | 4800           | 4610           | 1932          | 1988          | 16403          | 16536          |
| 16-Jul-2003     | 8816           | 8899           | 13878          | 13915          | 4848           | 4693           | 4800           | 4586           | 2142          | 2221          | 15932          | 16159          |
| 17-Jul-2003     | 8300           | 8555           | 13563          | 13559          | 4872           | 4655           | 4800           | 4588           | 2280          | 2338          | 16248          | 16441          |
| 18-Jul-2003     | 8089           | 8436           | 12835          | 12930          | 4800           | 4671           | 4800           | 4297           | 1950          | 2005          | 16165          | 16404          |
| 19-Jul-2003     | 7531           | 7745           | 13177          | 13254          | 4800           | 4704           | 7794           | 7299           | 1995          | 2070          | 16293          | 16339          |
| 20-Jul-2003     | 8258           | 8476           | 13344          | 13425          | 4848           | 4699           | 9600           | 9542           | 2085          | 2137          | 16060          | 16226          |
| 21-Jul-2003     | 6725           | 6776           | 12020          | 11912          | 4848           | 4769           | 9600           | 9579           | 3510          | 3603          | 15986          | 16060          |
| 22-Jul-2003     | 7633           | 8378           | 12468          | 12707          | 4848           | 4599           | 9600           | 9541           | 2580          | 2656          | 15852          | 16148          |
| 23-Jul-2003     | 8230           | 8698           | 13295          | 13659          | 7348           | 6919           | 9600           | 9511           | 2370          | 2441          | 5861           | 6400           |
| 24-Jul-2003     | 7646           | 8105           | 13056          | 13314          | 9438           | 9351           | 9600           | 9478           | 2205          | 2280          | 16238          | 16467          |
| 25-Jul-2003     | 7793           | 7964           | 12443          | 12899          | 9696           | 9407           | 9600           | 9428           | 2205          | 2283          | 16518          | 16725          |
| 26-Jul-2003     | 7668           | 7750           | 11311          | 11396          | 9720           | 9426           | 8510           | 8392           | 2505          | 2591          | 16518          | 16665          |
| 27-Jul-2003     | 7141           | 7052           | 10606          | 10552          | 9528           | 9586           | 7318           | 7261           | 4020          | 4185          | 16032          | 16187          |
| 28-Jul-2003     | 7106           | 7051           | 9889           | 10213          | 9504           | 9623           | 6375           | 6105           | 3060          | 3167          | 14775          | 15030          |
| 29-Jul-2003     | 7317           | 7572           | 11662          | 11765          | 9648           | 9372           | 3600           | 3489           | 2490          | 2571          | 16251          | 16576          |
| 30-Jul-2003     | 7525           | 7592           | 9344           | 9432           | 9720           | 9681           | 3600           | 3533           | 2100          | 2154          | 16367          | 16578          |
| 31-Jul-2003     | 7714           | 7935           | 9325           | 9307           | 9600           | 9739           | 3600           | 3391           | 1920          | 1988          | 16410          | 16585          |
| <b>Total MU</b> | <b>241.649</b> | <b>247.861</b> | <b>364.680</b> | <b>369.972</b> | <b>202.500</b> | <b>197.016</b> | <b>209.993</b> | <b>202.744</b> | <b>71.331</b> | <b>73.505</b> | <b>490.017</b> | <b>496.590</b> |
| <b>Max. MWH</b> | <b>8816</b>    | <b>8899</b>    | <b>13878</b>   | <b>13915</b>   | <b>9720</b>    | <b>9739</b>    | <b>9600</b>    | <b>9579</b>    | <b>4020</b>   | <b>4185</b>   | <b>16518</b>   | <b>16725</b>   |
| <b>Min MWH</b>  | <b>6272</b>    | <b>6418</b>    | <b>8672</b>    | <b>8639</b>    | <b>4560</b>    | <b>4372</b>    | <b>3600</b>    | <b>3391</b>    | <b>1838</b>   | <b>1854</b>   | <b>5861</b>    | <b>6400</b>    |
| <b>Avg. MWH</b> | <b>7795</b>    | <b>7996</b>    | <b>11764</b>   | <b>11935</b>   | <b>6532</b>    | <b>6355</b>    | <b>6774</b>    | <b>6540</b>    | <b>2301</b>   | <b>2371</b>   | <b>15807</b>   | <b>16019</b>   |

**IX. Schedule & Actual Injection of ISGS (Sheet 3 of 3)**

| Date            | Tanakpur      |               | Chamera        |                | Uri            |                | Bhakra Complex |                | Dehar          |                | Pong          |               |
|-----------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|
|                 | Schedule      | Actual        | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule       | Actual         | Schedule      | Actual        |
| 1-Jul-2003      | 2232          | 2264          | 12924          | 13129          | 11500          | 11323          | 27940          | 28002          | 15003          | 14715          | 2349          | 2648          |
| 2-Jul-2003      | 2232          | 2237          | 12924          | 13082          | 11433          | 11502          | 27940          | 29088          | 15003          | 14743          | 3003          | 2807          |
| 3-Jul-2003      | 2232          | 2269          | 12924          | 13108          | 11520          | 11585          | 28740          | 28833          | 15003          | 14681          | 2537          | 2000          |
| 4-Jul-2003      | 2225          | 2171          | 12924          | 13092          | 11520          | 11441          | 28740          | 28757          | 15003          | 14516          | 2034          | 1951          |
| 5-Jul-2003      | 1663          | 1538          | 12924          | 12946          | 11365          | 11193          | 28740          | 26926          | 15018          | 14719          | 2206          | 1344          |
| 6-Jul-2003      | 1584          | 1489          | 12924          | 13049          | 11394          | 10976          | 26658          | 27516          | 15278          | 14602          | 1542          | 165           |
| 7-Jul-2003      | 1533          | 1563          | 12924          | 13091          | 11058          | 11081          | 27628          | 27847          | 15278          | 14738          | 0             | 1844          |
| 8-Jul-2003      | 2180          | 1954          | 12924          | 13062          | 11400          | 11273          | 28459          | 28524          | 15398          | 14655          | 2371          | 2430          |
| 9-Jul-2003      | 2151          | 2139          | 12924          | 13042          | 11269          | 11301          | 28459          | 28618          | 15398          | 14663          | 2228          | 2295          |
| 10-Jul-2003     | 1863          | 1881          | 12816          | 12921          | 11400          | 11407          | 28459          | 28659          | 15398          | 14437          | 2371          | 2249          |
| 11-Jul-2003     | 1873          | 1953          | 11637          | 11755          | 11400          | 11445          | 28459          | 28434          | 15398          | 14657          | 2228          | 1685          |
| 12-Jul-2003     | 1690          | 1863          | 12727          | 12845          | 10392          | 10322          | 28459          | 28541          | 15398          | 14311          | 1722          | 1576          |
| 13-Jul-2003     | 2066          | 2112          | 12816          | 12946          | 11400          | 11446          | 28478          | 28793          | 15398          | 14638          | 1572          | 880           |
| 14-Jul-2003     | 2232          | 2254          | 12816          | 12984          | 11400          | 11459          | 28478          | 28962          | 15398          | 14616          | 882           | 1495          |
| 15-Jul-2003     | 2232          | 2254          | 12816          | 12951          | 11400          | 11436          | 28819          | 28947          | 15008          | 14529          | 1746          | 1710          |
| 16-Jul-2003     | 2232          | 2275          | 12816          | 12946          | 11400          | 11438          | 29010          | 29095          | 15013          | 14228          | 1748          | 540           |
| 17-Jul-2003     | 2232          | 2262          | 12816          | 12964          | 11400          | 11306          | 29010          | 29039          | 15010          | 14587          | 138           | 580           |
| 18-Jul-2003     | 2209          | 2254          | 12816          | 12956          | 11094          | 11362          | 29119          | 28739          | 15038          | 14767          | 891           | 289           |
| 19-Jul-2003     | 2077          | 2131          | 12816          | 12952          | 10950          | 11134          | 29119          | 29111          | 15038          | 14795          | 0             | -34           |
| 20-Jul-2003     | 2189          | 2224          | 12816          | 12957          | 10792          | 10758          | 29119          | 27509          | 15038          | 14611          | 0             | 326           |
| 21-Jul-2003     | 857           | 739           | 12816          | 12903          | 10355          | 10316          | 29128          | 28572          | 15038          | 15005          | 356           | 285           |
| 22-Jul-2003     | 1341          | 1334          | 12816          | 12961          | 9443           | 9703           | 27604          | 27457          | 15038          | 14610          | 358           | 930           |
| 23-Jul-2003     | 2101          | 2205          | 12816          | 12971          | 9410           | 9497           | 27621          | 27506          | 14773          | 15222          | 1083          | 536           |
| 24-Jul-2003     | 2206          | 2257          | 12816          | 12984          | 9173           | 9292           | 27621          | 27384          | 15035          | 14724          | 564           | 510           |
| 25-Jul-2003     | 2196          | 2237          | 12816          | 12967          | 8742           | 8887           | 27621          | 27519          | 15035          | 14766          | 564           | 327           |
| 26-Jul-2003     | 2232          | 2277          | 12816          | 12933          | 8432           | 8428           | 27648          | 27126          | 15035          | 14746          | 193           | 112           |
| 27-Jul-2003     | 2212          | 2249          | 12816          | 12887          | 8515           | 8633           | 27648          | 26693          | 15035          | 14526          | 193           | 144           |
| 28-Jul-2003     | 2176          | 2234          | 12816          | 12942          | 8080           | 8183           | 26903          | 26914          | 15035          | 15029          | 193           | 930           |
| 29-Jul-2003     | 2138          | 2172          | 12816          | 12804          | 7800           | 8115           | 26903          | 26866          | 15035          | 14779          | 1198          | 903           |
| 30-Jul-2003     | 2209          | 2248          | 12816          | 12991          | 7963           | 8150           | 26903          | 26844          | 15045          | 14836          | 800           | 1428          |
| 31-Jul-2003     | 2075          | 2209          | 12816          | 12958          | 7654           | 8069           | 26903          | 26708          | 15045          | 14854          | 1867          | 881           |
| <b>Total MU</b> | <b>62.670</b> | <b>63.248</b> | <b>397.000</b> | <b>401.079</b> | <b>321.054</b> | <b>322.461</b> | <b>872.336</b> | <b>869.529</b> | <b>468.666</b> | <b>455.305</b> | <b>38.937</b> | <b>35.766</b> |
| <b>Max. MWH</b> | <b>2232</b>   | <b>2277</b>   | <b>12924</b>   | <b>13129</b>   | <b>11520</b>   | <b>11585</b>   | <b>29128</b>   | <b>29111</b>   | <b>15398</b>   | <b>15222</b>   | <b>3003</b>   | <b>2807</b>   |
| <b>Min MWH</b>  | <b>857</b>    | <b>739</b>    | <b>11637</b>   | <b>11755</b>   | <b>7654</b>    | <b>8069</b>    | <b>26658</b>   | <b>26693</b>   | <b>14773</b>   | <b>14228</b>   | <b>0</b>      | <b>-34</b>    |
| <b>Avg. MWH</b> | <b>2022</b>   | <b>2040</b>   | <b>12806</b>   | <b>12938</b>   | <b>10357</b>   | <b>10402</b>   | <b>28140</b>   | <b>28049</b>   | <b>15118</b>   | <b>14687</b>   | <b>1256</b>   | <b>1154</b>   |

**X. Daily Generation Details of State Sector Stations**

(All Figs In MUs)

| Date        | Punjab(T) | Punjab(H) | Haryana(T) | Haryana(H) | Rajasthan(T) | Rajasthan(H) | UP (T)  | UP (H) | Uttaranchal(H) | Delhi  | HP     | J & K  | Total   |
|-------------|-----------|-----------|------------|------------|--------------|--------------|---------|--------|----------------|--------|--------|--------|---------|
| 01          | 35.61     | 20.64     | 17.17      | 0.90       | 23.36        | 0.08         | 47.54   | 4.38   | 10.48          | 9.75   | 13.13  | 4.55   | 189.65  |
| 02          | 34.38     | 20.79     | 16.69      | 0.92       | 26.39        | 0.00         | 46.78   | 4.04   | 12.02          | 10.17  | 10.82  | 4.55   | 189.60  |
| 03          | 35.08     | 19.99     | 17.70      | 0.99       | 30.24        | 0.00         | 47.15   | 4.20   | 12.06          | 10.79  | 13.15  | 4.55   | 197.96  |
| 04          | 35.45     | 19.85     | 17.52      | 0.62       | 25.64        | 0.00         | 50.46   | 3.27   | 12.92          | 11.45  | 12.61  | 4.55   | 196.39  |
| 05          | 31.68     | 18.16     | 14.20      | 0.08       | 26.84        | 0.09         | 55.53   | 4.04   | 9.77           | 9.82   | 13.53  | 4.55   | 190.35  |
| 06          | 29.76     | 18.28     | 18.62      | 0.54       | 23.49        | 0.26         | 47.04   | 3.15   | 9.58           | 9.19   | 13.56  | 4.55   | 180.08  |
| 07          | 37.21     | 19.48     | 15.36      | 0.94       | 24.95        | 0.00         | 45.86   | 3.45   | 12.41          | 9.50   | 13.29  | 4.55   | 189.04  |
| 08          | 37.21     | 19.48     | 15.36      | 0.94       | 24.95        | 0.00         | 44.82   | 4.11   | 12.82          | 9.95   | 13.30  | 4.55   | 189.52  |
| 09          | 36.40     | 19.44     | 13.92      | 1.02       | 25.06        | 0.00         | 44.58   | 4.13   | 14.02          | 10.53  | 13.57  | 4.55   | 189.27  |
| 10          | 29.40     | 18.78     | 14.77      | 1.02       | 31.34        | 0.09         | 43.45   | 3.74   | 14.07          | 10.81  | 13.81  | 4.55   | 187.88  |
| 11          | 28.93     | 18.10     | 7.52       | 1.03       | 20.54        | 0.00         | 46.02   | 3.78   | 12.80          | 7.48   | 13.84  | 4.55   | 166.63  |
| 12          | 29.94     | 18.07     | 6.28       | 1.04       | 14.58        | 0.10         | 50.19   | 2.92   | 13.63          | 8.17   | 14.11  | 4.55   | 165.63  |
| 13          | 32.08     | 18.10     | 4.60       | 1.01       | 12.16        | 0.08         | 50.89   | 2.96   | 13.68          | 9.14   | 14.85  | 4.55   | 166.15  |
| 14          | 35.80     | 18.36     | 9.71       | 1.00       | 12.83        | 0.32         | 44.56   | 4.33   | 11.77          | 9.11   | 13.86  | 4.55   | 168.23  |
| 15          | 38.18     | 18.17     | 13.26      | 0.97       | 15.44        | 0.38         | 45.91   | 5.12   | 14.52          | 10.00  | 13.86  | 4.55   | 182.41  |
| 16          | 40.55     | 18.22     | 11.78      | 0.97       | 13.40        | 0.99         | 41.41   | 5.35   | 13.71          | 10.38  | 14.13  | 3.82   | 176.75  |
| 17          | 36.91     | 16.55     | 12.40      | 0.97       | 15.78        | 0.00         | 40.46   | 5.72   | 13.14          | 9.79   | 14.41  | 3.82   | 171.98  |
| 18          | 29.26     | 15.57     | 10.09      | 1.01       | 16.98        | 0.00         | 42.42   | 5.49   | 12.76          | 12.02  | 14.81  | 3.82   | 166.28  |
| 19          | 30.67     | 16.17     | 10.32      | 1.01       | 18.63        | 0.00         | 42.54   | 5.90   | 12.40          | 10.97  | 14.56  | 3.82   | 169.03  |
| 20          | 34.40     | 19.10     | 9.17       | 1.01       | 19.56        | 0.47         | 43.61   | 5.65   | 12.51          | 13.21  | 14.48  | 3.82   | 179.01  |
| 21          | 32.29     | 14.11     | 8.02       | 0.83       | 20.04        | 1.58         | 43.30   | 1.72   | 12.40          | 11.47  | 14.52  | 3.82   | 166.15  |
| 22          | 33.84     | 15.72     | 9.05       | 0.96       | 19.33        | 0.28         | 39.69   | 1.67   | 13.06          | 8.48   | 14.55  | 3.86   | 162.53  |
| 23          | 38.75     | 17.23     | 11.10      | 0.87       | 19.25        | 0.00         | 40.22   | 5.42   | 12.95          | 10.31  | 14.76  | 3.86   | 176.77  |
| 24          | 37.58     | 16.64     | 15.41      | 0.83       | 20.07        | 0.00         | 40.39   | 5.95   | 13.16          | 13.15  | 14.83  | 3.86   | 183.93  |
| 25          | 42.04     | 16.85     | 15.71      | 0.84       | 21.23        | 0.12         | 39.87   | 5.80   | 12.55          | 12.94  | 14.90  | 3.86   | 188.77  |
| 26          | 42.80     | 16.33     | 15.45      | 1.02       | 22.44        | 0.25         | 43.81   | 5.62   | 13.65          | 12.23  | 14.59  | 3.86   | 194.09  |
| 27          | 40.42     | 16.25     | 15.09      | 0.96       | 21.96        | 0.00         | 43.81   | 2.82   | 10.83          | 12.28  | 14.81  | 3.86   | 185.12  |
| 28          | 41.38     | 16.73     | 13.45      | 1.04       | 22.65        | 0.21         | 43.81   | 2.82   | 12.02          | 12.31  | 14.89  | 3.86   | 187.23  |
| 29          | 42.71     | 16.19     | 12.34      | 1.05       | 25.26        | 0.15         | 41.67   | 6.85   | 12.76          | 13.21  | 16.26  | 3.86   | 194.33  |
| 30          | 43.43     | 13.57     | 14.66      | 1.05       | 19.34        | 0.15         | 43.40   | 6.22   | 13.77          | 13.63  | 16.34  | 3.86   | 191.45  |
| 31          | 41.58     | 14.70     | 15.15      | 1.03       | 23.12        | 0.16         | 41.18   | 5.51   | 13.83          | 13.53  | 16.24  | 3.17   | 191.24  |
| Maximum     | 43.43     | 20.79     | 18.62      | 1.05       | 31.34        | 1.58         | 55.53   | 6.85   | 14.52          | 13.63  | 16.34  | 4.55   | 197.96  |
| Minimum     | 28.93     | 13.57     | 4.60       | 0.08       | 12.16        | 0.00         | 39.69   | 1.67   | 9.58           | 7.48   | 10.82  | 3.17   | 162.53  |
| Average     | 35.99     | 17.60     | 12.96      | 0.92       | 21.19        | 0.19         | 44.59   | 4.39   | 12.65          | 10.83  | 14.21  | 4.17   | 181.72  |
| Month Total | 1115.70   | 545.62    | 401.88     | 28.49      | 656.86       | 5.77         | 1382.35 | 136.12 | 392.06         | 335.76 | 440.36 | 129.13 | 5633.44 |

# **XI. Performance Of Generating Stations**

| S.No.    | Power Station               | Effective Capacity MW | Energy Generated during | Cummulative from 01.04.2003 |
|----------|-----------------------------|-----------------------|-------------------------|-----------------------------|
|          |                             |                       | July, 2003 (Ex Bus MU)  | (Ex-bus MU)                 |
| <b>1</b> | <b>CENTRAL SECTOR</b>       |                       |                         |                             |
| <b>A</b> | <b>NTPC (Thermal)</b>       |                       |                         |                             |
| (a)      | Badarpur TPS                | 705.00                | 371.01                  | 1613.90                     |
| (b)      | Singrauli STPS              | 2000.00               | 1180.21                 | 4856.29                     |
| (c)      | Rihand STPS                 | 1000.00               | 656.79                  | 2616.73                     |
| (d)      | Dadri NCTPS                 | 840.00                | 454.59                  | 1794.07                     |
| (e)      | Unchahar-I TPS              | 420.00                | 263.91                  | 1056.60                     |
| (f)      | Unchahar-II TPS             | 420.00                | 252.22                  | 864.47                      |
| (g)      | Tanda TPS                   | 440.00                | 223.19                  | 773.76                      |
| (h)      | Anta GPS                    | 419.33                | 247.86                  | 927.39                      |
| (i)      | Auraiya GPS                 | 663.36                | 369.97                  | 1444.58                     |
| (j)      | Dadri GPS                   | 829.78                | 312.64                  | 1524.13                     |
| (k)      | Faridabad GPS               | 431.57                | 236.30                  | 900.73                      |
|          | <b>Total NTPC</b>           | <b>8169.04</b>        | <b>4568.68</b>          | <b>18372.66</b>             |
| <b>B</b> | <b>NHPC</b>                 |                       |                         |                             |
| (a)      | Bairasiul                   | 180.00                | 73.51                   | 360.21                      |
| (b)      | Salal                       | 690.00                | 496.59                  | 1705.36                     |
| (c)      | Tanakpur HPS                | 94.20                 | 63.25                   | 199.15                      |
| (d)      | Chamera HPS                 | 540.00                | 401.08                  | 1398.79                     |
| (e)      | Uri HPS                     | 480.00                | 322.46                  | 1327.48                     |
|          | <b>Total NHPC</b>           | <b>1984.20</b>        | <b>1356.89</b>          | <b>4990.99</b>              |
| <b>C</b> | <b>NPC</b>                  |                       |                         |                             |
| (a)      | RAPS -A                     | 300.00                | 105.05                  | 439.20                      |
| (b)      | RAPS -B                     | 440.00                | 202.74                  | 897.12                      |
| (c)      | NAPS                        | 440.00                | 197.02                  | 825.03                      |
|          | <b>Total NPC</b>            | <b>1180.00</b>        | <b>504.81</b>           | <b>2161.35</b>              |
| <b>2</b> | <b>JOINTLY OWNED (BBMB)</b> |                       |                         |                             |
| (a)      | Bhakra Complex              | 1490.15               | 869.53                  | 2431.95                     |
| (b)      | Dehar                       | 990.00                | 455.31                  | 1573.78                     |
| (c)      | Pong                        | 390.00                | 35.76                   | 265.86                      |
|          | <b>Total BBMB</b>           | <b>2870.15</b>        | <b>1360.60</b>          | <b>4271.59</b>              |
| <b>3</b> | <b>DELHI</b>                |                       |                         |                             |
| (a)      | Indra Prastha               | 247.50                | 48.70                   | 177.39                      |
| (b)      | Rajghat                     | 149.00                | 58.50                   | 193.60                      |
| (c)      | Gas Turbines                | 282.00                | 87.18                   | 341.35                      |
| (d)      | Pragati Gas                 | 330.00                | 139.84                  | 693.36                      |
|          | <b>Total DELHI</b>          | <b>1008.50</b>        | <b>334.22</b>           | <b>1405.70</b>              |
| <b>4</b> | <b>HARYANA</b>              |                       |                         |                             |
| (a)      | WYC                         | 48.00                 | 28.38                   | 98.28                       |
| (b)      | Faridabad (New)             | 165.00                | 61.49                   | 267.22                      |
| (c)      | Panipat                     | 860.00                | 372.51                  | 1444.71                     |
| (d)      | Magnum Diesel(IPP)          | 25.20                 | 3.76                    | 22.13                       |
|          | <b>Total Haryana</b>        | <b>1098.20</b>        | <b>466.14</b>           | <b>1832.34</b>              |

contd/-

|          |                                         |                |                |                |
|----------|-----------------------------------------|----------------|----------------|----------------|
| <b>5</b> | <b>HP</b>                               |                |                |                |
| (a)      | Giri                                    | 60.00          | 30.42          | 48.34          |
| (b)      | Bassi                                   | 60.00          | 43.64          | 162.73         |
| (c)      | Binwa                                   | 6.00           | 3.14           | 12.01          |
| (d)      | Rongtong<br>(+Nogli+Micro+Thirot+Sal-2) | 15.25          | 2.07           | 7.77           |
| (e)      | Andhra                                  | 16.95          | 8.54           | 28.20          |
| (f)      | Bhabha (H)                              | 120.00         | 89.65          | 299.48         |
| (g)      | Baner (H)                               | 12.00          | 5.19           | 17.20          |
| (h)      | Gaj (H)                                 | 10.50          | 6.09           | 20.29          |
| (i)      | Gumma                                   | 3.00           | 0.95           | 3.35           |
| (j)      | Ghanvi                                  | 22.50          | 10.11          | 32.89          |
| (k)      | Malana (IPP)                            | 86.00          | 68.50          | 180.80         |
| (l)      | Baspa (IPP)                             | 300.00         | 235.94         | 444.11         |
|          | <b>Total HP</b>                         | <b>712.20</b>  | <b>504.24</b>  | <b>813.06</b>  |
| <b>6</b> | <b>J &amp; K</b>                        |                |                |                |
| (a)      | Lower Jhelum                            | 105.00         | 58.50          | 226.14         |
| (b)      | Upper Sindh                             | 127.60         | 31.32          | 119.73         |
| (c)      | Ganderbal                               | 15.00          | 2.02           | 5.47           |
| (d)      | Mohra                                   | 9.00           | 0.00           | 0.00           |
| (e)      | Chenani                                 | 32.80          | 6.63           | 24.46          |
| (f)      | Stakna                                  | 9.75           | 0.00           | 0.00           |
| (g)      | Small Hydel                             | 3.54           | 0.00           | 0.00           |
| (h)      | Sewa                                    | 9.00           | 0.00           | 0.00           |
| (i)      | Diesel gen set                          | 7.18           | 0.00           | 0.00           |
| (j)      | Pampore GT St - I                       | 75.00          | 0.00           | 0.00           |
| (k)      | Pampore GT St - II                      | 100.00         | 0.00           | 0.00           |
|          | <b>Total J &amp; K</b>                  | <b>493.87</b>  | <b>98.48</b>   | <b>375.80</b>  |
| <b>7</b> | <b>PUNJAB</b>                           |                |                |                |
| (a)      | Jogindernagar/<br>Shanan                | 110.00         | 77.05          | 288.21         |
| (b)      | UBDC                                    | 90.00          | 56.94          | 184.36         |
| (c)      | Mukerian                                | 207.00         | 40.22          | 296.89         |
| (d)      | Anandpur Sahib (APS)                    | 134.00         | 93.67          | 293.02         |
| (e)      | Ranjit Sagar HPS                        | 600.00         | 275.59         | 830.13         |
| (f)      | Small Hydel                             | 4.10           | 0.00           | 2.32           |
| (g)      | GNDTPS (Bhatinda)                       | 440.00         | 208.56         | 735.66         |
| (h)      | GGSTPS (Ropar)                          | 1260.00        | 630.54         | 2214.66        |
| (i)      | Jhalkeri Rice Straw<br>Fired            | 10.00          | 0.00           | 0.00           |
| (j)      | Lehra Mohabbat TPS                      | 420.00         | 271.86         | 978.89         |
|          | <b>Total Punjab</b>                     | <b>3275.10</b> | <b>1654.43</b> | <b>5824.14</b> |
| <b>8</b> | <b>RAJASTHAN</b>                        |                |                |                |
| (a)      | Mahi Bajaj Sagar                        | 140.00         | 0.22           | 0.22           |
| (b)      | Rana Pratap Sagar (RPS)                 | 172.00         | 0.00           | 24.38          |
| (c)      | Jawahar Sagar (JS)                      | 99.00          | 5.08           | 25.24          |
| (d)      | Anoopgarh                               | 9.00           | 0.00           | 0.88           |
| (e)      | Small Hydro                             | 14.85          | 1.34           | 3.73           |
| (f)      | Kota TPS                                | 1045.00        | 285.12         | 1768.88        |
| (g)      | RAMGARH GT                              | 3.00           | 0.00           |                |
| (h)      | RAMGARH GT EXT                          | 35.50          | 20.02          | 73.25          |
| (i)      | Suratgarh TPS                           | 1250.00        | 341.95         | 1831.91        |
| (j)      | Wind Farm                               | 14.01          | 11.08          | 46.69          |
|          | <b>Total Rajasthan</b>                  | <b>2782.36</b> | <b>664.81</b>  | <b>3775.18</b> |

contd/-

|           |                      |                 |                 |                 |
|-----------|----------------------|-----------------|-----------------|-----------------|
| <b>9</b>  | <b>U.P.</b>          |                 |                 |                 |
|           | <u>HYDRO</u>         |                 |                 |                 |
| (a)       | Rihand               | 300.00          | 60.13           | 256.35          |
| (b)       | Obra                 | 99.00           | 27.68           | 111.55          |
| (c)       | Matatilla            | 30.00           | 4.99            | 11.19           |
| (d)       | Ganga Canal          | 10.70           | 0.00            | 0.00            |
| (e)       | Small hydro          | 18.20           | 0.00            | 0.00            |
| (f)       | Khara                | 72.00           | 47.03           | 157.99          |
|           | Total U.P. (Hydro)   | <b>529.90</b>   | <b>139.84</b>   | <b>537.07</b>   |
|           | <u>THERMAL</u>       |                 |                 |                 |
| (e)       | Obra                 | 1442.00         | 480.70          | 1899.94         |
| (f)       | Panki                | 242.00          | 44.67           | 205.59          |
| (g)       | Harduaganj           | 375.00          | 27.98           | 122.70          |
| (h)       | Paricha              | 220.00          | 39.18           | 172.72          |
| (i)       | Anpara               | 1630.00         | 780.38          | 3461.20         |
|           | Total U.P. (Thermal) | <b>3909.00</b>  | <b>1372.91</b>  | <b>5862.15</b>  |
|           | <b>Total U.P.</b>    | <b>4438.90</b>  | <b>1512.75</b>  | <b>6399.22</b>  |
| <b>10</b> | <b>UTTRANCHAL</b>    |                 |                 |                 |
| (a)       | Khatima              | 41.40           | 17.82           | 64.01           |
| (b)       | Ramganga             | 198.00          | 0.00            | 21.16           |
| (c)       | Ganga Canal          | 32.70           | 26.91           | 56.62           |
| (d)       | Yamuna ( I & IV )    | 114.75          | 71.26           | 222.13          |
| (e)       | Chibro               | 240.00          | 124.46          | 354.44          |
| (f)       | Khodri               | 120.00          | 56.18           | 167.60          |
| (g)       | Chilla               | 144.00          | 86.00           | 263.95          |
| (h)       | Maneri Bhali         | 90.00           | 9.35            | 191.97          |
|           | Total Uttranchal     | <b>980.85</b>   | <b>391.98</b>   | <b>1341.88</b>  |
|           |                      |                 |                 |                 |
| <b>11</b> | <b>CHANDIGARH</b>    |                 |                 |                 |
|           | Diesel gen set       | <b>1.40</b>     |                 |                 |
|           | <b>Total Region</b>  | <b>28994.77</b> | <b>13418.02</b> | <b>51563.90</b> |

Notes : 1. The ex-bus generations are either actual values or based on the following assumptions in respect of auxiliary consumption

-----Hydro and diesel/gas power stations in open cycle-----1.0%

-----Gas power stations in combined cycle-----3.0%

-----Coal fired power stations

IP ----12% Rajghat---11% Faridabad---13.5% Suratgarh----10.0%

Panipat---12.0% RTP---7.5% GNDTP---10.5% Tanda---12.5%

Lehra Mohabbat---10.5% KTPS---10% UP---12.5%

**XII. DETAILS OF ENERGY EXCHANGES THROUGH BILATERAL AGREEMENTS ( INTRA-REGIONAL ) DURING JULY 2003****( ALL FIGS IN MWH )**

| FROM /<br>TO | PUNJAB | HARYANA | RAJASTHAN | DELHI    | UP       | UTTRANCHAL | HP        | J & K     | CHANDIGARH |
|--------------|--------|---------|-----------|----------|----------|------------|-----------|-----------|------------|
| PUNJAB       | -      | -       | -         | 27400 *  | -        | 29750 ***  | 84042 *** | 77500 *** | -          |
| HARYANA      | -      | -       | -         | 17575 ** | -        | -          | 22138 *   | -         | -          |
| RAJASTHAN    | -      | -       | -         | -        | -        | -          | -         | -         | -          |
| DELHI        | -      | -       | -         | -        | 56283 ** | 81720 *    | 231400 ** | -         | -          |
| UP           | -      | -       | -         | -        | -        | -          | -         | -         | -          |
| UTTRANCHAL   | -      | -       | -         | -        | -        | -          | -         | -         | -          |
| HP           | -      | -       | -         | -        | -        | -          | -         | -         | -          |
| J & K        | -      | -       | -         | -        | -        | -          | -         | -         | -          |
| CHANDIGARH   | -      | -       | -         | -        | -        | 3600 *     | -         | -         | -          |

\* Through PTC

\*\* Through Mutual

\*\*\* Through Banking

REMARKS : Figures are provisional and indicative only.

**XIII. DETAILS OF ENERGY EXCHANGES THROUGH BILATERAL AGREEMENTS ( INTER-REGIONAL ) DURING JULY 2003****( ALL FIGS IN MWH )**

| <b>FROM /<br/>TO</b> | <b>GOA</b>      | <b>MP</b> | <b>WBPCL</b>   | <b>DVC</b>    |
|----------------------|-----------------|-----------|----------------|---------------|
| <b>PUNJAB</b>        | -               | -         | -              | -             |
| <b>HARYANA</b>       | -               | -         | -              | <b>2700 *</b> |
| <b>RAJASTHAN</b>     | -               | -         | -              | -             |
| <b>DELHI</b>         | <b>29218 **</b> | -         | <b>53332 *</b> | -             |

**\* Through PTC**

**\*\* Through Global Energy Limited**

**REMARKS : Figures are provisional and indicative only**

## XIV. Inter Regional Exchanges During July 2003 (Sheet 1 of 2)

1 OF 2

| Date    | With WR Over Vindhyachal HVDC B/B {Export (-)/Import(+)} |             |            |            |               |               |          | With WR Over Auraiya - Malanpur {Export(-)/Import(+)} |             |            |            |               |               |          |
|---------|----------------------------------------------------------|-------------|------------|------------|---------------|---------------|----------|-------------------------------------------------------|-------------|------------|------------|---------------|---------------|----------|
|         | Peak MW                                                  | Off Peak MW | Max Import | Max Export | Energy Import | Energy Export | Net (MU) | Peak MW                                               | Off Peak MW | Max Import | Max Export | Energy Import | Energy Export | Net (MU) |
| 01      | 0                                                        | 50          | 100        | 200        | 0.98          | 0.28          | 0.70     | -24                                                   | -25         | 0          | 21         | 0.00          | 0.41          | -0.41    |
| 02      | 50                                                       | 50          | 150        | 50         | 1.28          | 0.04          | 1.24     | -24                                                   | -25         | 0          | 25         | 0.00          | 0.45          | -0.45    |
| 03      | -50                                                      | 500         | 500        | 50         | 4.33          | 0.02          | 4.31     | -24                                                   | -25         | 0          | 25         | 0.00          | 0.47          | -0.47    |
| 04      | 0                                                        | 200         | 250        | 50         | 2.45          | 0.00          | 2.45     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.44          | -0.44    |
| 05      | 50                                                       | 50          | 100        | 300        | 1.12          | 0.83          | 0.29     | -26                                                   | -23         | 0          | 26         | 0.00          | 0.43          | -0.43    |
| 06      | 50                                                       | 50          | 150        | 50         | 1.36          | 0.02          | 1.34     | -25                                                   | -24         | 0          | 25         | 0.00          | 0.41          | -0.41    |
| 07      | 50                                                       | 50          | 500        | 0          | 2.92          | 0.00          | 2.92     | -24                                                   | -23         | 0          | 25         | 0.00          | 0.45          | -0.45    |
| 08      | 200                                                      | 150         | 250        | 350        | 0.71          | 1.18          | -0.47    | -24                                                   | -23         | 0          | 25         | 0.00          | 0.52          | -0.52    |
| 09      | 250                                                      | 50          | 50         | 500        | 0.05          | 4.74          | -4.69    | -24                                                   | -23         | 0          | 25         | 0.00          | 0.54          | -0.54    |
| 10      | -200                                                     | -400        | 100        | 500        | 0.05          | 6.87          | -6.82    | -24                                                   | -23         | 0          | 25         | 0.00          | 0.50          | -0.50    |
| 11      | 0                                                        | -350        | 200        | 500        | 0.66          | 5.77          | -5.11    | -24                                                   | -23         | 0          | 25         | 0.00          | 0.50          | -0.50    |
| 12      | 50                                                       | -200        | 50         | 400        | 0.51          | 2.06          | -1.55    | -24                                                   | -25         | 0          | 25         | 0.00          | 0.54          | -0.54    |
| 13      | 25                                                       | -200        | 125        | 400        | 0.47          | 2.27          | -1.80    | -24                                                   | -25         | 0          | 25         | 0.00          | 0.44          | -0.44    |
| 14      | 125                                                      | 25          | 125        | 50         | 0.60          | 0.04          | 0.56     | -24                                                   | -25         | 0          | 26         | 0.00          | 0.46          | -0.46    |
| 15      | -150                                                     | 25          | 50         | 450        | 0.40          | 0.87          | -0.48    | -25                                                   | -24         | 0          | 26         | 0.00          | 0.45          | -0.45    |
| 16      | 50                                                       | 50          | 200        | 50         | 1.38          | 0.00          | 1.38     | -25                                                   | -24         | 0          | 26         | 0.00          | 0.45          | -0.45    |
| 17      | 0                                                        | 50          | 250        | 100        | 0.65          | 0.81          | -0.16    | -25                                                   | -24         | 0          | 26         | 0.00          | 0.46          | -0.46    |
| 18      | 200                                                      | -50         | 100        | 450        | 0.16          | 3.77          | -3.61    | -25                                                   | -24         | 0          | 26         | 0.00          | 0.46          | -0.46    |
| 19      | -150                                                     | 0           | 50         | 400        | 0.43          | 1.40          | -0.97    | -25                                                   | -24         | 0          | 26         | 0.00          | 0.52          | -0.52    |
| 20      | 0                                                        | 50          | 50         | 300        | 0.58          | 1.47          | -0.89    | -25                                                   | -20         | 0          | 25         | 0.00          | 0.40          | -0.40    |
| 21      | 50                                                       | -350        | 50         | 500        | 0.02          | 5.50          | -5.48    | -20                                                   | -15         | 0          | 20         | 0.00          | 0.38          | -0.38    |
| 22      | -100                                                     | 25          | 175        | 150        | 0.80          | 0.27          | 0.53     | -24                                                   | -23         | 0          | 25         | 0.00          | 0.45          | -0.45    |
| 23      | 25                                                       | 25          | 275        | 0          | 0.88          | 0.00          | 0.88     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.48          | -0.48    |
| 24      | 0                                                        | 25          | 200        | 150        | 0.93          | 0.21          | 0.72     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.51          | -0.51    |
| 25      | 50                                                       | 200         | 400        | 50         | 3.33          | 0.00          | 3.33     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.51          | -0.51    |
| 26      | -200                                                     | 25          | 100        | 150        | 0.76          | 0.13          | 0.63     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.44          | -0.44    |
| 27      | 0                                                        | 25          | 50         | 150        | 0.54          | 0.11          | 0.43     | -20                                                   | -20         | 0          | 25         | 0.00          | 0.36          | -0.36    |
| 28      | 50                                                       | 25          | 50         | 100        | 0.58          | 0.20          | 0.38     | -20                                                   | -22         | 0          | 25         | 0.00          | 0.38          | -0.38    |
| 29      | 50                                                       | 25          | 150        | 100        | 0.77          | 0.25          | 0.52     | -24                                                   | -23         | 0          | 25         | 0.00          | 0.45          | -0.45    |
| 30      | 50                                                       | 25          | 150        | 100        | 0.98          | 0.00          | 0.98     | -24                                                   | -20         | 0          | 25         | 0.00          | 0.47          | -0.47    |
| 31      | 50                                                       | 25          | 100        | 275        | 0.54          | 0.35          | 0.19     | -25                                                   | -24         | 0          | 26         | 0.00          | 0.47          | -0.47    |
| Maximum | 250                                                      | 500         | 500        | 500        | 4.33          | 6.87          | 4.31     | -20                                                   | -15         | 0          | 26         | 0.00          | 0.54          | -0.36    |
| Minimum | -200                                                     | -400        | 50         | 0          | 0.02          | 0.00          | -6.82    | -26                                                   | -25         | 0          | 20         | 0.00          | 0.36          | -0.54    |
| Average | 19                                                       | 7           | 163        | 222        | 1.01          | 1.27          | -0.27    | -23                                                   | -23         | 0          | 25         | 0.00          | 0.46          | -0.46    |
| Total   |                                                          |             |            |            | 31.21         | 39.46         | -8.26    |                                                       |             |            |            | 0.00          | 14.17         | -14.17   |

## XIV. Inter Regional Exchanges During July 2003 (Sheet 2 of 2)

2 of 2

| Date    | With WR Over Ujjain - Kota {Export(-)/Import(+)} |                   |                  |                  |                     |                     |           | With ER {Export(-)/Import(+)} |                   |                  |                  |                     |                     |           |
|---------|--------------------------------------------------|-------------------|------------------|------------------|---------------------|---------------------|-----------|-------------------------------|-------------------|------------------|------------------|---------------------|---------------------|-----------|
|         | Peak MW<br>MW                                    | Off Peak MW<br>MW | Max Import<br>MW | Max Export<br>MW | Energy Import<br>MU | Energy Export<br>MU | Net<br>MU | Peak MW<br>MW                 | Off Peak MW<br>MW | Max Import<br>MW | Max Export<br>MW | Energy Import<br>MU | Energy Export<br>MU | Net<br>MU |
| 01      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 50                | 50               | 0                | 1.26                | 0.00                | 1.26      |
| 02      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 183                           | 183               | 283              | 0                | 4.93                | 0.00                | 4.93      |
| 03      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 500               | 500              | 0                | 6.18                | 0.00                | 6.18      |
| 04      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 293               | 342              | 0                | 3.08                | 0.00                | 3.08      |
| 05      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 195               | 245              | 0                | 2.84                | 0.00                | 2.84      |
| 06      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 50                | 150              | 0                | 1.65                | 0.00                | 1.65      |
| 07      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 50                | 150              | 0                | 1.75                | 0.00                | 1.75      |
| 08      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 50                | 150              | 0                | 1.90                | 0.00                | 1.90      |
| 09      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 96                            | 96                | 96               | 0                | 2.40                | 0.00                | 2.40      |
| 10      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 0                             | 96                | 96               | 50               | 1.42                | 0.00                | 1.42      |
| 11      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 58                            | 0                 | 50               | 300              | 0.43                | 1.05                | -0.62     |
| 12      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 109                           | 0                 | 0                | 166              | 0.41                | 0.46                | -0.05     |
| 13      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 209                           | 0                 | 306              | 0                | 4.09                | 0.50                | 3.59      |
| 14      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 176                           | 196               | 379              | 0                | 5.03                | 0.00                | 5.03      |
| 15      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 115                           | 174               | 176              | 0                | 3.52                | 0.00                | 3.52      |
| 16      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 0                             | 157               | 259              | 0                | 3.06                | 0.00                | 3.06      |
| 17      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 200                           | 209               | 259              | 0                | 4.76                | 0.00                | 4.76      |
| 18      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 206                           | 205               | 206              | 0                | 4.96                | 0.00                | 4.96      |
| 19      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 50                            | 204               | 204              | 0                | 4.12                | 0.00                | 4.12      |
| 20      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 159                           | 184               | 186              | 0                | 4.03                | 0.00                | 4.03      |
| 21      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 165                           | 50                | 165              | 200              | 1.91                | 1.12                | 0.79      |
| 22      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 122                           | 122               | 172              | 0                | 3.45                | 0.00                | 3.45      |
| 23      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 119                           | 172               | 172              | 0                | 3.39                | 0.00                | 3.39      |
| 24      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 160                           | 159               | 160              | 0                | 3.91                | 0.00                | 3.91      |
| 25      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 160                           | 259               | 260              | 0                | 4.94                | 0.00                | 4.94      |
| 26      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 160                           | 410               | 410              | 0                | 4.96                | 0.00                | 4.96      |
| 27      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 100                           | 159               | 160              | 0                | 3.34                | 0.00                | 3.34      |
| 28      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 160                           | 160               | 200              | 0                | 4.11                | 0.00                | 4.11      |
| 29      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 189                           | 208               | 258              | 0                | 4.87                | 0.00                | 4.87      |
| 30      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 207                           | 303               | 404              | 0                | 6.20                | 0.00                | 6.20      |
| 31      | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 213                           | 206               | 313              | 0                | 5.23                | 0.00                | 5.23      |
| Maximum | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 213                           | 500               | 500              | 300              | 6.20                | 1.12                | 6.20      |
| Minimum | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 0                             | 0                 | 0                | 0                | 0.41                | 0.00                | -0.62     |
| Average | 0                                                | 0                 | 0                | 0                | 0.00                | 0.00                | 0.00      | 118                           | 165               | 218              | 23               | 3.49                | 0.10                | 3.39      |
| Total   |                                                  |                   |                  |                  | 0.00                | 0.00                | 0.00      |                               |                   |                  |                  | 108.12              | 3.13                | 104.99    |

**XV. Progress Of Installation Of Shunt Capacitors As On 31.07.2003**

(ALL FIGS IN MVar)

| CONSTITUENT  | REQUIREMENT AT<br>THE END OF<br>2002-03 | CAPACITORS AS ON<br>31.03.2003 | CAPACITORS ADDITION<br>DURING |            | BALANCE NOT<br>INSTALLED DURING<br>2002-03 |
|--------------|-----------------------------------------|--------------------------------|-------------------------------|------------|--------------------------------------------|
|              |                                         | INSTALLED                      | 2002-03                       | 2003 - 04  |                                            |
| Chandigarh   | 116                                     | 92                             | 0                             | 0          | 24                                         |
| Delhi        | 2932                                    | 2755                           | 122                           | 35         | 177                                        |
| Haryana      | 2797                                    | 2685                           | 333                           | 8          | 112                                        |
| H.P.         | 319                                     | 278                            | 73                            | 19         | 41                                         |
| J & K        | 924                                     | 147                            | 0                             | 0          | 777                                        |
| Punjab       | 5107                                    | 4706                           | 76                            | 3          | 401                                        |
| Rajasthan    | 2695                                    | 2698                           | 221                           | 22         | 0                                          |
| U.P.         | 5225                                    | 4965                           | 274                           | 15         | 260                                        |
| Uttranchal   | 286                                     | 123                            | 0                             | 0          | 163                                        |
| BBMB         | 360                                     | 381                            | 0                             | 0          | 0                                          |
| <b>TOTAL</b> | <b>20761</b>                            | <b>18830</b>                   | <b>1099</b>                   | <b>102</b> | <b>1955</b>                                |

**SOURCE:** Minutes of 343th OCC meeting of NREB held on 08th August, 2003.

**XVI. Hydraulic Data For Reservoirs During July 2003**

| Item                                                       | Bhakra                          | Pong                            | Rihand                         | R.P.S.                          | Gandhi Sagar<br>(M.P.)          |
|------------------------------------------------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Full Reservoir Level (m)<br>(FRL) (ft)                     | 514.50<br>1688.00               | 433.12<br>1421.00               | 268.22<br>880.00               | 352.65<br>1157.00               | 402.64<br>1321.00               |
| Min. Draw Down Level (m)<br>(MDDL) (ft)                    | 445.62<br>1462.00               | 384.05<br>1260.00               | 252.98<br>830.00               | 342.90<br>1125.00               | 381.00<br>1250.00               |
| Level on last day of<br>july 2003 (m)                      | 495.09<br>1624.32               | 401.41<br>1316.96               | 254.33<br>834.40               | 346.22<br>1135.88               | 383.41<br>1257.90               |
| Level on last day of<br>july 2002 (m)                      | 486.75<br>1596.95               | 393.28<br>1290.28               | 254.33<br>834.42               | 344.56<br>1130.45               | 379.57<br>1245.32               |
| Live Capacity as on (mhmt)<br>last day of july 2003 (maft) | 0.42<br>3.37                    | 0.19<br>1.54                    | 0.04<br>0.30                   | 0.05<br>0.37                    | 0.04<br>0.33                    |
| Live Capacity as on (mhmt)<br>last day of july 2002(maft)  | 0.33<br>2.69                    | 0.09<br>0.74                    | 0.04<br>0.30                   | 0.02<br>0.17                    | 0.00<br>0.00                    |
| Energy content as on last<br>day of july 2003 (MU)         | 1650.00                         | 260.00                          | 65.00                          | 90.00                           | 100.00                          |
| Energy content as on last<br>day of july 2002 (MU)         | 1240.00                         | 110.00                          | 50.00                          | 40.00                           | 0.00                            |
| Maximum level (m)<br>(ft)<br>(date)                        | 495.09<br>1624.32<br>31.07.2003 | 401.41<br>1316.96<br>31.07.2003 | 255.00<br>836.60<br>28.07.2003 | 346.22<br>1135.88<br>31.07.2003 | 383.41<br>1257.90<br>31.07.2003 |
| Minimum level (m)<br>(ft)<br>(date)                        | 486.63<br>1596.55<br>01.07.2003 | 393.10<br>1289.70<br>03.07.2003 | 253.75<br>832.50<br>01.07.2003 | 345.70<br>1134.17<br>01.07.2003 | 378.87<br>1243.00<br>01.07.2003 |

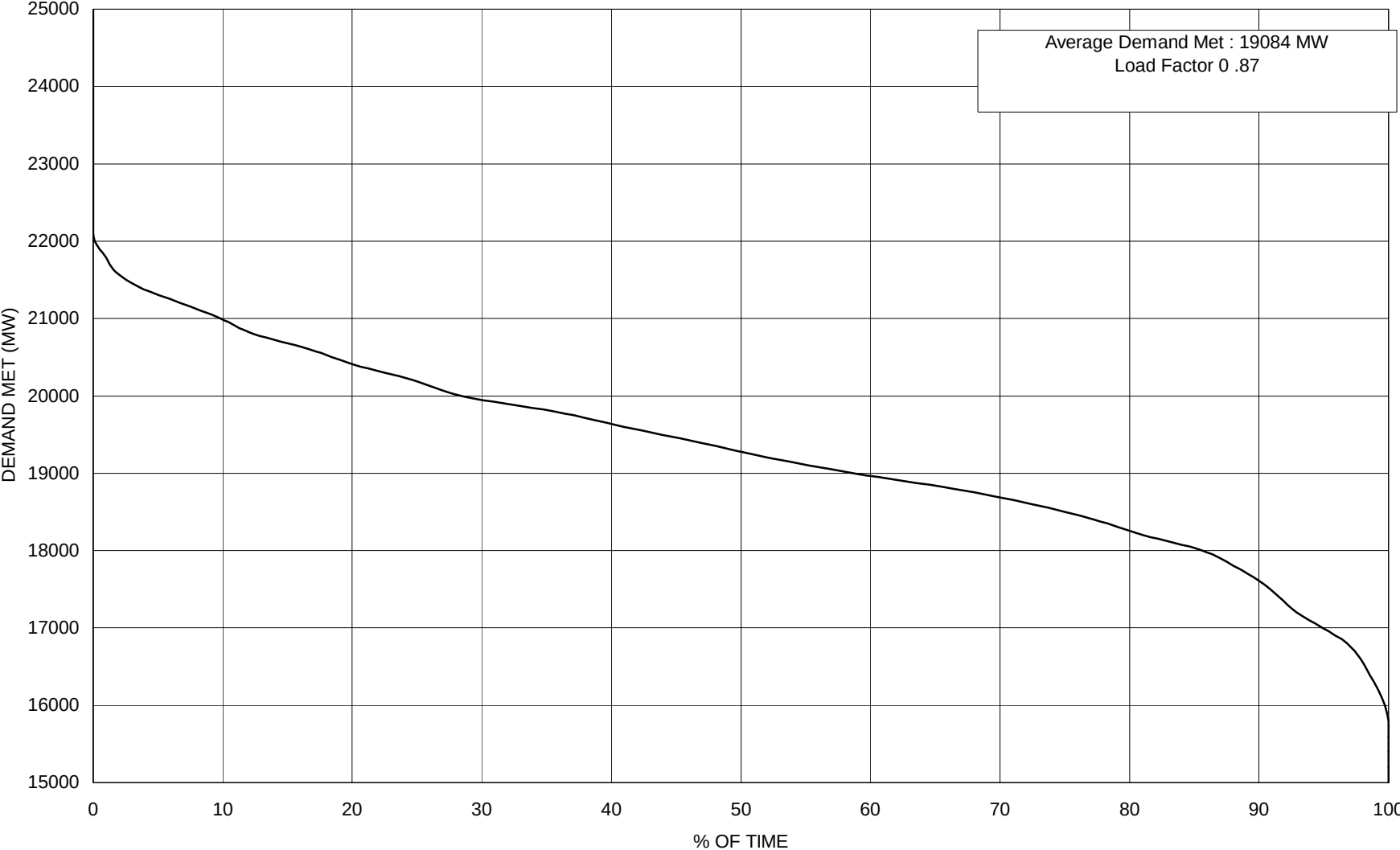
**Energy content of Bhakra : Total Energy content at Bhakra, Ganguwal and Kotla power stations**

**Energy content of Rihand : Total Energy content at Rihand & Obra power stations**

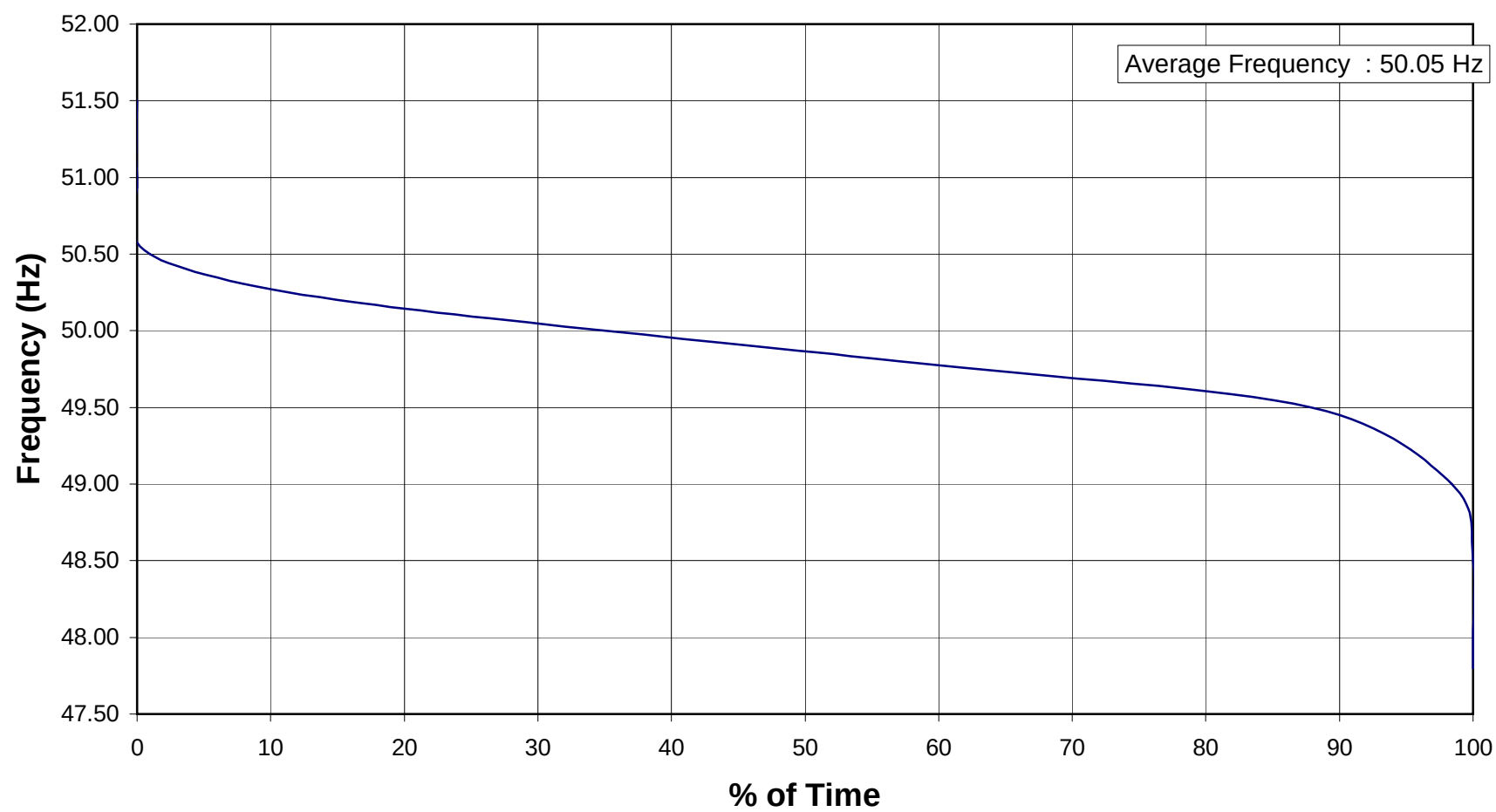
**Energy content of RPS : Total Energy content of Rana Pratap Sagar and Jawahar Sagar Power Stations.**

**Energy Content of G. Sagar : Total Energy content at Gandhi Sagar, RP Sagar and Jawahar Sagar Power Stations.**

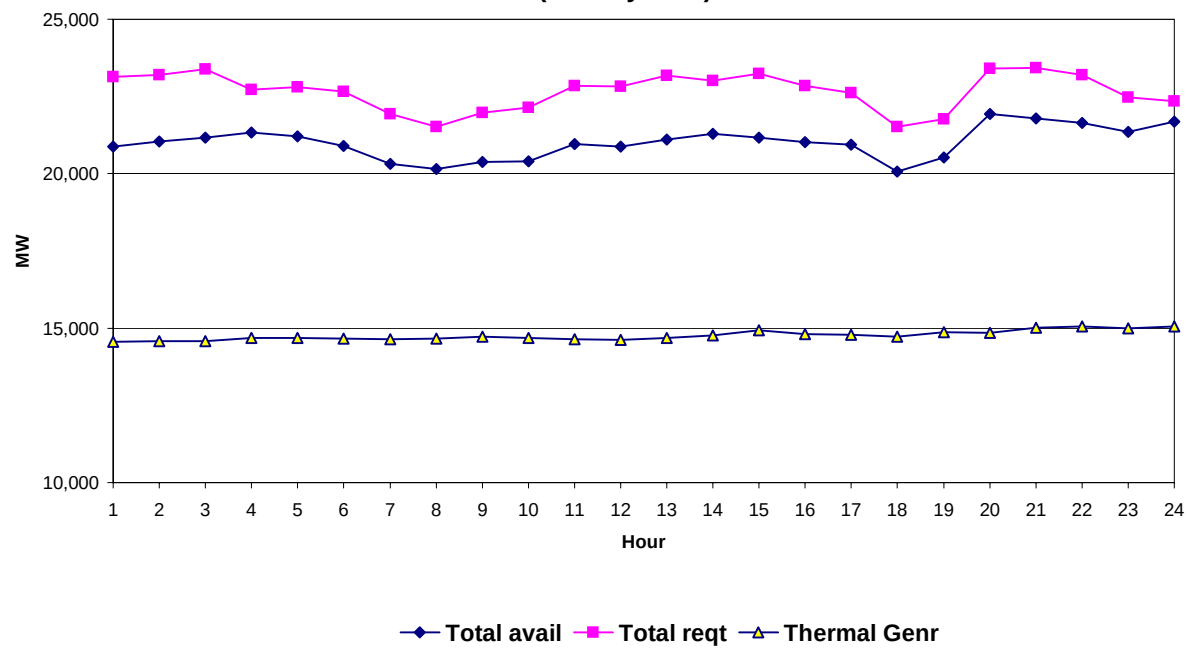
Load Duration Curve For Northern Region For July 2003



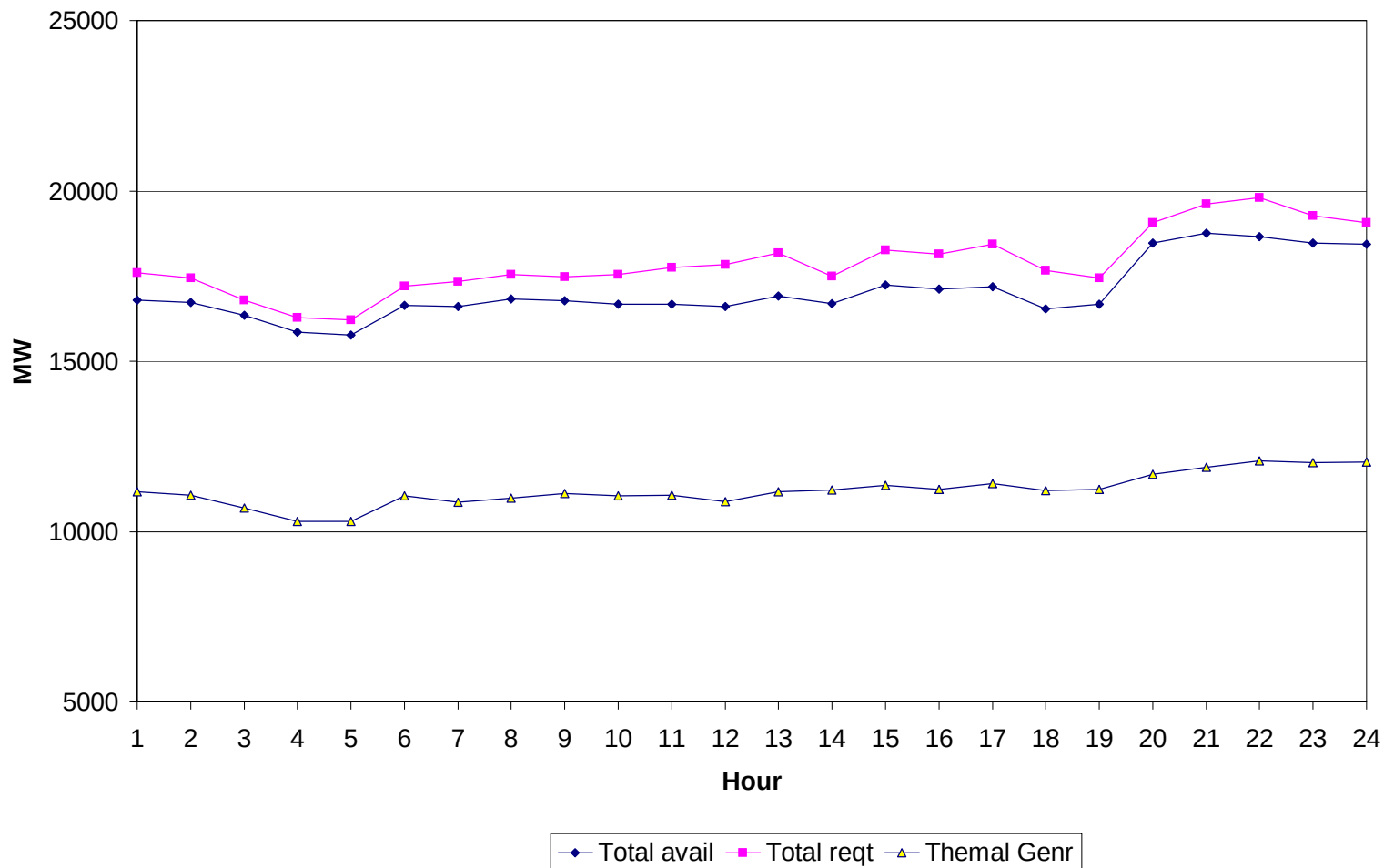
### Frequency Duration Curve For Northern Region For July 2003

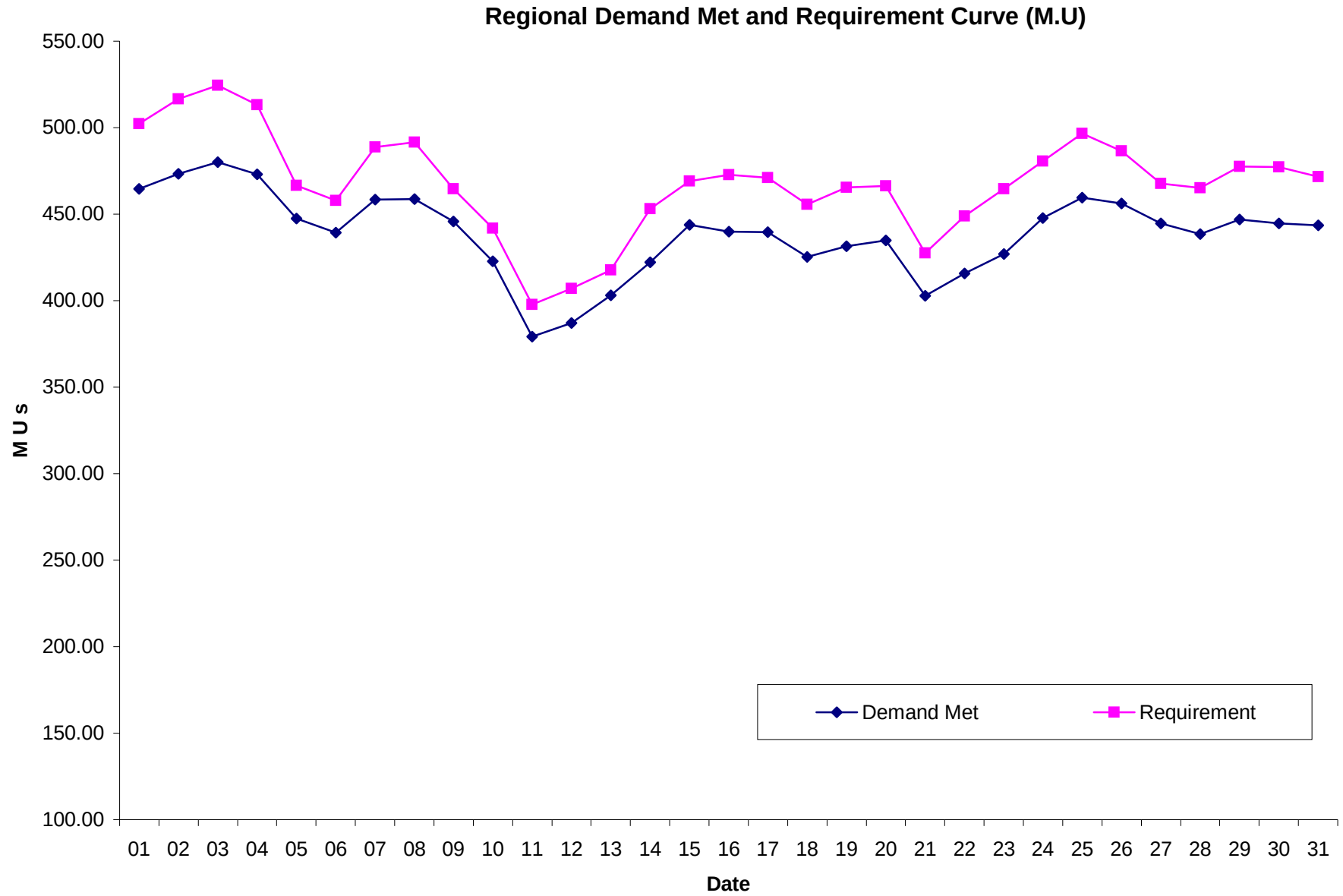


Load Curve Of Northern Region For Maximum Demand Met Day  
(4th July 2003)



**Load Curve Of Northern Region For Minimum Demand Met Day (12th July 2003)**





**Grid Incident during July 2003**

| Date       | Time      | Incident                                                                                                                                                                                                                                                                                                 |
|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01.07.2003 | 15.48 hrs | All the units at Uri HEP tripped due to tripping of 220 kV Kishanpur-Pampore D/C. This resulted in power supply Failure in J&K valley. System was normalised by 16.10 hrs.                                                                                                                               |
| 19.07.2003 | 18.17 hrs | At BTPS, due to phase to phase fault in 220 kV BTPS-Okhla line, 220 kV BTPS-IP ckt.-I tripped from both ends and 220 kV BTPS-Ballbgarh D/C from Ballabgarh end only. Unit No. 1 & 2 at BTPS tripped simultaneously. All the four lines were closed by 18.40 hrs and units were synchronised by 19.50 hrs |