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NORTHERN REGION GRID REPORT FOR THE MONTH OF FEBRUARY 2003

A) Summary Report

1. Grid Overview during the Month

During the month of February 2003 the average system frequency was 49.75 Hz and frequency remained in the normal range i.e. between 49.0 & 50.5 Hz for 84.80% of the time. During the month with the slight increase in the temperature, there was respite from the severe cold wave conditions persisted during last month the overall frequency profile during February 2003 was better as compared to January 2003.

Overall voltage profile in the grid during the month has been satisfactory on most of the 400 kV buses except that on some of the days when grid experienced severe high voltage conditions due to load crash in the grid on account of inclement weather conditions.

As regard to the availability of transmission network the 400 kV Uri-Wagoora D/C went under breakdown at 2204 hrs on 18.02.2003 due to cyclone in valley area. The ckts were normalized on 26.02.2003 at 1806 hrs and on 07.03.2003 at 2340 hrs respectively. Delay in normalization was due to heavy snowfall and inclement weather conditions in J&K valley area. Due to outage of both the ckts between Uri and Wagoora for certain duration in the month, there was no generation at Uri HEP from 2204 hrs to 1806 hrs of 26.02.2003. Loss of generation varied between 145 MW to 480 MW during different periods of the day and the total loss of generation was estimated to around 79 MU.

The 400 kV Unnao-Agra line of UPPCL went under planned shutdown on 20.02.2003 for a period of around one month to replace defective insulators and other maintenance works. However, there was no loss of generation due to above outage.

There was no major grid disturbance during the month. However a severe load crash occurred on 18th/19th February due to wide spread rains in the region. It was an unprecedentedly high load crash and the system size reduced to the tune of 7000-8000 MW due to crash in demand due to heavy rains and bad weather as well as on account of disruption of distribution network. High voltage conditions also prevailed which resulted in tripping of large number of 400 kV lines. The details are enclosed at Annexure-4.

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

Pragati ST (114 MW) of Pragati Power Station of Delhi synchronised on 04.02.2003 at 10.20 hrs.

3. Frequency Profile :

Maximum frequency	51.54	Hz	at	02.26	hours on	19.02.2003
Minimum frequency	48.24	Hz	at	22.09	hours on	07.02.2003
Average frequency	49.75	Hz				

Frequency distribution in %

Hz	< 48.5	<49.0	49.0-50.5	> 50.5
% of time	0.26	6.58	84.80	8.62

Frequency Variation Index

Monthly Average	3.40
Maximum	8.75
Minimum	1.12

4. Power Supply Position :**a. Average Energy/day (Net)**

State / U.T.	Demand met MU/Day	Requirement MU/Day	Shortage MU/Day	Shortage %
Punjab	57.14	62.00	4.86	7.84
Haryana	44.48	46.00	1.52	3.30
Rajasthan	67.06	70.00	2.94	4.20
U.P.	97.48	105.62	8.14	7.71
Uttanchal	9.89	10.00	0.11	1.10
Delhi	47.11	48.05	0.94	1.96
Chandigarh	2.80	2.80	0.00	0.00
H.P.	9.06	9.06	0.00	0.00
J & K	17.11	20.11	3.00	14.92
N.F.F./Rail	1.46	1.46	0.00	0.00
Total	353.59	375.00	21.41	5.71

b. Peak MW

State / U.T.	MAX. Demand met MW	MAX. Requirement MW	Shortage MW	Shortage %
	A	B	D	(D/B)*100
Punjab	3414	3650	236	6.47
Haryana	2561	2650	89	3.36
Rajasthan	3525	3600	75	2.08
U.P.	5061	6250	1189	19.02
Uttanchal	645	665	20	3.01
Delhi	2810	2980	170	5.70
H.P.	614	614	0	0.00
J & K	931	1100	169	15.36
Chandigarh	140	140	0	0.00
N.F.F./Rail	70	70	0	0.00
Region	19307	21000	1693	8.06

Diversity Factor = **1.08**

* Approximate and Estimated

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

(All figs in M.U)

State / U.T.	Schedule	Actual Drawal	OD/UD
Punjab	555.18	538.15	-17.03
Haryana	519.29	591.98	72.69
Rajasthan	773.29	794.58	21.29
U.P.	1182.77	1131.04	-51.73
Uttaranchal	151.90	157.08	5.18
Delhi	727.10	665.04	-62.06
H.P.	219.15	224.13	4.98
J & K	430.99	441.55	10.56
Chandigarh	71.34	76.63	5.29
N.F.F./Rail	50.77	55.92	5.15

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

a)	From WR over HVDC Vindhyachal B/B	6.89	250
b)	From WR to over 220 kV Ujjain-Kota	0	0
c)	From ER over HVDC Sasaram B/B	101.35	403
d)	From ER over 220 kV Dehri-Sahupuri	0	0

Export

d)	To WR over HVDC Vindhyachal B/B	70.47	450
e)	To WR (MP) over 220 kV Auraiya-Malanpur	26.27	70
f)	To ER (Bihar) over 220 kV/132kV lines	7.50	60
g)	To Nepal over 132 kV Tanakpur-Mahendernagar	5.45	10
h)	To ER over HVDC Sasaram B/B	30.76	280

B). Detailed Report

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

	<u>STATION</u>	<u>INSTALLED CAPACITY</u>	<u>EFFECTIVE CAPACITY</u>
		(MW)	
A	NTPC		
(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	8184.04	8169.04
B	NHPC		
(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	2010.00	1984.20
C.	NPC		
(a)	RAPS -A	2x220 440.00	1x100+1x200 300.00
(b)	RAPS -B	2x220 440.00	2x220 440.00
(c)	NAPS	2x235 470.00	2x220 440.00
	Sub-Total	1350.00	1180.00
Total Central Sector (A + B + C)		11544.04	11333.24
2	BBMB		
(a)	Bhakra Complex		
(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	1490.15	1490.15
(b)	Dehar	6x165 990.00	6x165 990.00
(c)	Pong	2x60 + 4x66 384.00	2x60 + 4x66 384.00
	Total BBMB	2864.15	2864.15

3	CHANDIGARH				
(a)	Diesel Gen Sets		2.00		1.40
4	DELHI				
	THERMAL				
(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
	Total DELHI		1009.50		1008.50
5	HARYANA				
	HYDRO				
(a)	Western Yamuna Canal (WYC)	6x8	48.00	6x8	48.00
	Total Hydro		48.00		48.00
	THERMAL				
(b)	Faridabad (New)	3x60	180.00	3x55	165.00
(c)	Panipat	4x110+2x210	860.00	4x110+2x210	860.00
	Total Thermal		1040.00		1025.00
(d)	Magnum Diesel (IPP)	4x6.3	25.20	4x6.3	25.20
	Total Haryana		1113.20		1098.20
6	HIMACHAL PRADESH				
	HYDRO				
(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
	Total HP		412.20		412.20
7	J & K				
	HYDRO				
(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
	Total Hydro		311.69		311.69

J & K (Contd.)				
(h)	GAS TURBINES			
	Pampore GT St - I	3x25.0	75.00	3x25.0
	Pampore GT St - II	4x25.0	100.00	4x25.0
9h)	Total Gas		175.00	175.00
(I)	Diesel Gen. Sets		8.94	7.18
	Total J & K		495.63	493.87
8	PUNJAB			
(a)	HYDRO			
	Jogindernagar/ Shanan	4x15+1x50	110.00	4x15+1x50
(b)	Upper Behari Doab 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
	Total Hydro		1145.10	1145.10
(g)	THERMAL			
	Guru Nanak Dev TPS (Bhatinda)	4x110	440.00	4x110
(h)	Guru Gobind Singh TPS (Ropar)	6x210	1260.00	6x210
(i)	Lehra Mohabbat TPS	2x210	420.00	2x210
(j)	Jhalkeri Rice Straw Fired	1x10	10.00	1x10
	Total Thermal		2130.00	2130.00
	Total Punjab		3275.10	3275.10
9	RAJASTHAN			
(a)	HYDRO			
	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
	Total Hydro		434.85	434.85
(f)	THERMAL			
	Kota TPS	2x110+3x210	850.00	2x110+3x210
(g)	Suratgarh TPS	4x250	1000.00	4x250
(g)	Ramgarh GT	1x3	3.00	1x3
(i)	Ramgarh GT EXT.	1x35.5	35.50	1x35.5
	Total Thermal		1888.50	1888.50
(J)	Wind farm		14.01	14.01
	Total Rajasthan		2337.36	2337.36

10	UP				
	HYDRO				
(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
	Total Hydro		529.90		529.90
	THERMAL				
(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
	Total Thermal		4192.00		3909.00
	Total UP		4721.90		4438.90
11	UTTRANCHAL				
	HYDRO				
(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
	Total Hydro		980.85		980.85
	Total Region (1 to 11)		28755.93		28243.77

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	28.92%
NHPC	1984.20	0.00	0.00	0.00	1984.20	7.03%
NPC	0.00	0.00	0.00	1180.00	1180.00	4.18%
BBMB	2864.15	0.00	0.00	0.00	2864.15	10.14%
CHANDIGARH	0.00	0.00	1.40	0.00	1.40	0.00%
DELHI	0.00	396.50	612.00	0.00	1008.50	3.57%
HARYANA	48.00	1025.00	25.20	0.00	1098.20	3.89%
HIMACHAL	412.20	0.00	0.00	0.00	412.20	1.46%
J&K	311.69	0.00	182.18	0.00	493.87	1.75%
PUNJAB	1145.10	2130.00	0.00	0.00	3275.10	11.60%
RAJASTHAN	434.85	1850.00	52.51	0.00	2337.36	8.28%
UP	529.90	3909.00	0.00	0.00	4438.90	15.72%
UTTRANCHAL	980.85	0.00	0.00	0.00	980.85	3.47%
Total	8710.94	15135.50	3217.33	1180.00	28243.77	100.00%
% of TOTAL	30.84%	53.59%	11.39%	4.18%	100.00%	

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 DVB 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 drawls over designated transmission lines.
- (iii) HP has a fixed energy share 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
Total		386

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 28.02.2003

Agency / Source	Run-of -the -river	Reservoir	Total
NHPC	1444.20	540.00	1984.20
BBMB	1155.15	1709.00	2864.15
DELHI	0.00	0.00	0.00
HARYANA	48.00	0.00	48.00
HP	412.20	0.00	412.20
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
TOTAL	5191.94	3519.00	8710.94
PERCENTAGE	59.60%	40.40%	100%

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	0.28	7.60	36.71	73.11	35.92	19.28	8.41	0.00
02	0.00	0.31	5.27	23.28	87.88	42.29	6.86	0.20	0.00
03	0.00	0.30	6.79	36.01	91.59	26.89	1.63	0.00	0.00
04	0.00	0.00	4.46	24.32	93.83	34.27	1.71	0.30	0.00
05	0.00	0.07	4.12	23.15	93.42	30.17	2.45	0.15	0.00
06	0.00	0.07	4.12	23.15	93.42	30.17	2.45	0.15	0.00
07	0.00	0.91	11.87	49.36	87.93	9.61	0.19	0.00	0.00
08	0.00	0.19	12.21	48.05	83.34	26.60	4.45	0.00	0.00
09	0.00	0.00	5.80	30.50	90.24	31.90	3.97	0.00	0.00
10	0.00	0.00	8.11	37.84	89.94	26.95	1.95	0.06	0.00
11	0.00	0.04	3.92	34.61	94.92	11.68	01.16	0.00	0.00
12	0.00	0.42	8.53	50.98	90.59	9.28	0.89	0.00	0.00
13	0.00	0.00	4.97	33.86	94.17	17.99	0.85	0.00	0.00
14	0.00	0.45	8.78	38.56	88.58	27.94	2.63	0.33	0.00
15	0.00	0.36	12.78	54.05	86.56	10.24	0.66	0.07	0.00
16	0.00	0.00	2.29	25.97	84.34	38.15	13.37	01.54	0.00
17	0.00	0.00	0.32	4.76	65.17	77.21	34.51	5.81	0.00
18	0.00	0.00	0.25	1.36	39.39	89.46	60.37	23.70	0.00
19	0.00	5.28	19.24	37.99	51.49	41.90	29.26	17.64	0.00
20	0.00	0.00	2.01	21.38	87.51	43.25	10.48	0.00	0.00
21	0.00	0.00	4.06	17.51	84.69	53.97	11.25	0.22	0.00
22	0.00	0.55	3.35	12.28	85.40	59.51	11.25	0.20	0.00
23	0.00	0.00	0.53	6.70	81.03	60.94	18.45	1.10	0.00
24	0.00	0.00	1.22	8.38	74.11	45.07	24.67	1.53	0.00
25	0.00	0.00	0.43	8.79	90.46	45.18	9.11	0.68	0.00
26	0.00	0.05	1.22	13.19	97.49	35.87	1.28	0.00	0.00
27	0.00	0.05	1.01	8.17	95.85	48.12	3.14	0.22	0.00
28	0.00	0.00	0.31	4.38	86.35	58.19	8.51	0.45	0.00
29									
30									
31									
Max	0.00	5.28	12.78	54.05	97.49	89.46	60.37	23.70	0.00
Min	0.00	0.00	0.31	1.36	39.39	9.28	0.66	0.00	0.00
Average	0.00	0.26	6.58	33.20	84.80	31.67	8.62	2.15	0.00

[illegible]

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	420	00.43	392	10.11	422	00.43	400	18.52	219	02.25	203	18.53	412	01.47	383	17.49
02	418	03.04	390	10.44	415	01.32	399	18.57	218	01.56	206	08.44	405	22.51	385	19.39
03	420	03.11	392	06.37	413	00.44	399	06.35	219	00.58	204	18.28	405	22.51	385	19.39
04	418	03.29	392	18.47	415	02.17	397	06.56	220	04.12	206	18.46	406	01.17	385	10.20
05	420	01.41	392	06.57	413	01.38	399	06.24	219	01.28	207	06.58	404	17.00	379	18.46
06	420	01.41	392	06.57	413	01.38	399	06.24	219	01.28	207	06.58	406	16.50	380	19.10
07	412	04.00	395	08.00	408	04.00	399	20.00	217	04.00	204	09.00	404	17.00	385	19.00
08	418	04.06	388	10.21	420	04.07	400	10.29	219	03.58	204	10.24	404	17.30	385	19.00
09	416	01.59	394	12.26	411	00.57	397	12.23	219	02.23	207	18.55	408	16.10	387	18.57
10	420	04.07	392	10.23	410	00.57	397	10.19	220	04.00	206	18.44	411	04.06	383	18.41
11	416	04.11	386	12.25	411	04.08	393	12.25	219	04.17	202	18.50	408	08.40	382	18.44
12	414	04.11	390	10.17	411	4.15	400	09.00	219	4.12	203	18.54	402	08.23	384	18.51
13	412	04.09	390	09.54	411	00.56	399	09.53	216	03.59	204	10.22	408	08.02	382	23.04
14	412	04.09	390	09.54	411	00.56	399	09.53	216	03.59	204	10.22	408	08.02	382	23.04
15	410	02.13	388	09.53	411	18.06	399	09.53	218	04.11	206	11.14	405	07.13	391	00.33
16	420	21.54	392	12.14	415	21.54	400	06.56	219	21.55	207	18.39	408	21.54	382	18.38
17	422	23.23	392	10.54	419	23.50	399	06.56	220	23.53	206	18.47	413	21.27	385	17.48
18	428	21.53	394	07.29	428	23.57	400	06.56	222	03.29	204	19.29	425	23.59	383	07.27
19	436	03.51	384	18.49	433	01.21	393	19.07	222	03.45	204	19.29	430	01.43	392	16.27
20	422	01.43	386	19.02	415	01.13	395	18.59	222	03.45	200	19.02	410	01.43	378	18.33
21	420	02.13	386	18.52	413	02.12	395	18.51	218	03.00	202	18.00	408	02.11	383	18.44
22	418	02.05	386	18.47	415	02.30	397	18.42	216	02.00	200	18.40	411	01.07	380	18.45
23	418	01.06	390	19.11	413	02.46	399	08.09	214	01.00	204	19.00	410	01.06	383	19.09
24	416	23.56	384	18.52	411	24.00	397	18.54	217	01.00	201	19.00	409	23.57	378	18.51
25	416	01.53	386	18.54	411	00.59	399	06.29	215	03.00	201	19.00	407	13.02	378	18.54
26	418	02.18	386	06.54	410	00.58	397	06.53	212	01.54	201	06.54	409	02.46	385	06.54
27	418	02.25	390	18.59	410	02.28	399	06.29	212	02.59	202	18.54	412	03.53	384	18.34
28	420	01.00	386	18.53	411	00.59	393	19.10	211	01.02	197	18.55	414	01.05	384	15.18
29																
30																
31																
Max	436		395		433		400		222		207		430		392	
Min	410		384		408		393		211		197		402		378	

V. Regional Power Supply Position

(All Figs In MUs)

Date	Availability (Gross) MW	Peak Hrs. Requirement MW	Shortage/ Restriction MW	Availability (Gross) MW	Off Peak Hrs. Requirement MW	Shortage/ Restriction* MW	Regional Availability MU
01	18556	20097	1541	13019	13019	0	348
02	18558	19826	1268	14029	14129	100	359
03	18484	20062	1578	13925	14585	660	362
04	18539	20454	1915	14690	15050	360	330
05	18692	20527	1835	14977	15337	360	368
06	18752	20587	1835	15037	15397	360	369
07	18569	20318	1749	15133	15493	360	367
08	18313	19774	1461	15274	15634	360	368
09	18350	19909	1559	15285	15775	490	366
10	18798	20450	1652	15118	15608	490	368
11	19135	20812	1677	15398	15588	190	372
12	19307	21492	2185	15921	16111	190	374
13	19021	21023	2002	15867	16247	380	374
14	19089	20914	1825	16343	16533	190	386
15	18833	20713	1880	16377	16737	360	383
16	19191	20276	1085	15921	16281	360	378
17	18903	20438	1535	15305	15665	360	366
18	14319	15339	1020	12903	12903	0	296
19	15798	17114	1316	7180	7180	0	254
20	17398	19593	2195	12093	12193	100	321
21	17688	19544	1856	13343	13343	0	340
22	17703	19388	1685	13857	13857	0	341
23	17663	18883	1220	14255	14300	45	343
24	17882	19463	1581	13431	13776	345	344
25	18351	19804	1453	14522	15012	490	354
26	18907	19757	850	14502	14692	190	365
27	18863	20065	1202	15142	15332	190	368
28	18980	20436	1456	14900	15090	190	371
29							
30							
31							
Maximum	19307	21492	2195	16377	16737	660	386
Minimum	14319	15339	850	7180	7180	0	254
Average	18309	19895	1586	14420	14674	254	355

Note: * Shortage / Restriction figures are as given by the constituents.

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	2977	2088	1852	1577	3053	2447	2515	1236	4698	3386
02	2953	2065	2166	1553	3071	2761	2574	1325	4454	3929
03	3042	2069	1904	1628	3255	2670	2309	1376	4561	4222
04	3227	2215	2140	1844	3136	2855	2438	1353	4357	4321
05	3309	2188	2202	1891	2454	2543	2422	1254	4232	4123
06	3309	2188	2202	1891	2454	2543	2422	1254	4232	4123
07	3414	2344	2186	1921	2510	2430	2428	1287	4263	4230
08	3163	2216	2113	1920	2558	2548	2414	1309	4506	4218
09	3163	2216	2113	1920	2558	2548	2414	1309	4506	4218
10	3015	2225	2337	1854	2523	2534	2446	1206	4601	4392
11	3112	2490	2463	2026	2536	2533	2588	1241	4692	4559
12	2935	2651	2561	2144	3525	3301	2493	1256	4729	4629
13	3246	2736	2282	1907	3420	3266	2600	1186	4727	4595
14	3339	2889	2357	2045	3421	3320	2553	1226	4684	4549
15	3141	3055	2547	1882	2524	2528	2476	1166	4455	4689
16	3232	2965	2515	2087	3290	3059	2298	1211	4486	4237
17	2894	2145	2482	1836	2544	2432	2623	1165	4601	4418
18	1722	1731	1935	1655	1757	2324	2519	1159	4077	3973
19	2157	606	1980	639	1959	980	2296	1039	3693	2339
20	2667	1734	1967	1487	1910	1635	2358	1217	4217	3855
21	3077	1920	2257	1646	2826	2630	2453	1206	4143	4155
22	2922	2022	2084	1725	3004	2650	2423	1187	4677	4126
23	2887	1951	2079	1835	2241	1959	2422	1196	4357	4503
24	2770	1701	2179	1560	2328	2223	2510	1143	4467	4267
25	2914	1987	2442	1896	2074	2280	2483	1112	4569	4396
26	2984	1961	2166	1856	2217	2261	2327	1159	4670	4440
27	3105	2114	2263	1955	2202	2174	2388	1201	4545	4522
28	2927	2132	2468	1890	2340	2153	2441	1237	4606	4094
29										
30										
31										
Maximum	3414	3055	2561	2144	3525	3320	2623	1376	4729	4689
Minimum	1722	606	1852	639	1757	980	2296	1039	3693	2339
Average	2986	2164	2223	1788	2632	2485	2451	1222	4457	4197

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	537	306	140	90	554	249	653	832
02	604	327	140	90	398	246	785	820
03	618	315	140	90	534	263	888	818
04	553	338	140	90	526	280	842	809
05	619	358	125	110	509	278	785	795
06	619	358	125	110	509	278	785	795
07	605	324	125	110	502	280	792	619
08	615	331	125	110	502	280	759	625
09	615	331	125	110	502	280	759	610
10	598	295	125	110	539	264	674	554
11	534	341	125	110	614	265	840	582
12	645	324	125	110	485	266	769	772
13	582	309	125	110	522	266	856	758
14	520	315	135	110	460	272	820	753
15	584	338	135	110	343	279	814	755
16	587	345	135	110	473	283	814	755
17	597	333	135	110	460	284	804	768
18	438	250	135	110	440	238	510	748
19	552	237	135	110	460	245	458	929
20	519	288	130	95	492	268	550	719
21	519	288	130	95	492	268	548	455
22	589	316	130	95	482	326	592	504
23	533	326	130	95	511	305	595	469
24	545	269	130	95	476	265	595	469
25	538	315	130	95	464	283	595	469
26	526	291	130	95	543	275	931	649
27	576	336	130	95	460	264	893	757
28	600	315	120	95	508	278	918	554
29								
30								
31								
Maximum	645	358	140	110	614	326	931	929
Minimum	438	237	120	90	343	238	864	837
Average	570	315	131	102	491	272	737	684

VII Daily Energy Consumption By Constituents

(All Figs In MUs)

Date	Punjab	Haryana	Rajasthan	Delhi	UP	Uttaranchal	Chandigarh	HP	J & K	Total
01	57.297	40.532	60.886	48.788	94.274	10.753	2.865	9.513	18.396	343.304
02	55.680	41.780	65.410	50.664	97.303	10.360	2.865	9.963	18.833	352.858
03	56.094	42.834	68.718	48.198	106.494	10.493	2.790	10.201	19.181	365.004
04	60.056	44.191	66.178	48.761	99.899	9.918	2.790	9.016	18.762	359.572
05	61.726	44.238	73.281	46.444	97.596	10.521	2.790	8.844	19.209	364.649
06	61.726	44.238	73.281	46.444	97.596	10.521	2.790	8.844	19.209	364.649
07	61.170	44.463	73.303	49.510	95.804	10.332	2.790	8.864	19.077	365.313
08	59.227	44.223	70.893	48.992	98.750	10.201	2.790	8.864	18.882	362.822
09	55.187	39.601	73.051	51.962	100.252	9.998	2.790	8.864	18.882	360.586
10	57.861	45.587	72.373	46.146	102.760	9.914	2.790	9.255	18.843	365.529
11	61.151	48.581	70.668	47.139	97.359	9.817	2.860	9.875	18.581	366.031
12	63.038	46.978	71.205	46.754	101.836	9.858	2.860	8.320	19.568	370.416
13	65.401	47.934	68.878	46.442	101.318	9.503	2.860	9.237	19.818	371.392
14	68.204	49.265	73.841	47.008	103.215	9.735	2.860	8.423	19.240	381.790
15	67.012	47.810	75.302	45.485	102.728	10.379	2.860	8.384	19.259	379.220
16	64.217	50.365	70.288	43.969	104.506	10.245	2.880	8.628	19.259	374.356
17	57.414	48.225	67.877	45.928	103.159	10.457	2.898	8.628	17.642	362.228
18	39.888	38.837	49.189	41.227	90.883	10.457	2.745	8.500	17.642	299.367
19	32.381	33.354	38.178	43.227	73.872	7.084	2.745	6.705	6.823	244.369
20	49.661	40.160	58.229	45.542	89.830	9.443	2.745	8.968	10.306	314.884
21	54.226	43.946	61.029	45.519	85.643	9.857	2.745	9.084	11.928	323.978
22	56.291	44.034	62.719	43.370	89.656	9.847	2.745	9.351	12.457	330.470
23	52.346	42.666	67.617	44.499	96.496	9.616	2.745	9.516	13.407	338.908
24	51.409	44.270	70.409	45.121	99.335	9.262	2.745	10.222	13.359	346.131
25	55.486	44.134	68.531	44.331	97.851	9.419	2.745	10.544	16.443	349.484
26	57.187	48.124	66.771	44.733	98.765	9.556	2.745	8.498	17.822	354.201
27	58.693	47.066	69.119	44.714	100.608	9.667	2.745	8.723	19.757	361.092
28	59.898	48.107	70.312	45.449	101.702	9.768	2.745	9.724	16.577	364.281
29										
30										
31										
Maximum	68.204	50.365	75.302	51.962	106.494	10.753	2.898	10.544	19.818	381.790
Minimum	32.381	33.354	38.178	41.227	73.872	7.084	2.745	6.705	6.823	244.369
Average	57.140	44.484	67.055	46.299	97.482	9.892	2.797	9.056	17.113	351.317
Month Total	1599.928	1245.543	1877.533	1296.364	2729.487	276.981	78.323	253.561	479.163	9836.884

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-Feb-2003	19142	18037	17675	19125	27700	25328	25262	29090	40588	36754	5346	5091
2-Feb-2003	19329	15821	17968	20008	27411	23832	24672	27437	38546	35431	5382	4790
3-Feb-2003	19301	16157	18322	19131	26616	24801	25761	28215	37899	36119	5329	4829
4-Feb-2003	18528	16982	19210	21335	27191	25445	26576	25318	41626	38649	5955	6281
5-Feb-2003	19641	17784	19117	22143	27253	26326	26439	25238	42353	37812	5866	6287
6-Feb-2003	19459	13728	20400	23528	27659	27028	25911	23894	41089	39159	5955	6894
7-Feb-2003	19708	14317	19800	23817	27770	27658	26259	24688	45708	42058	6182	6763
8-Feb-2003	18437	15618	18470	20039	27834	27370	28218	25232	46087	41855	6161	6706
9-Feb-2003	18321	15295	19238	24923	27644	27375	25543	21277	45419	42270	6247	6738
10-Feb-2003	18634	16967	18865	22346	27814	27169	25577	20311	45342	45546	6302	6598
11-Feb-2003	21374	21568	18864	23392	28690	28253	25751	20771	43303	41580	5959	6835
12-Feb-2003	21171	19899	19260	23847	28931	28089	27743	21148	45258	45366	6013	7386
13-Feb-2003	21095	21653	20749	24334	28881	28544	28683	21212	46827	45587	5967	6829
14-Feb-2003	20890	21887	20028	23693	28584	27589	28630	22811	48347	44762	6106	7074
15-Feb-2003	18961	20017	20172	22829	28740	27920	28282	23009	47680	45115	6840	7474
16-Feb-2003	19370	19659	19572	22003	28084	27957	28018	20365	47339	45650	6813	8035
17-Feb-2003	20310	20722	20210	21590	28256	26545	27624	22374	49363	51109	7206	8018
18-Feb-2003	19322	19623	15622	18094	23917	26494	26292	26899	46578	47139	5303	4366
19-Feb-2003	18926	19855	18317	15771	24934	32839	19673	25314	35659	33185	3947	230
20-Feb-2003	18843	21971	15886	17649	26758	29256	23314	23209	36729	35285	2165	2077
21-Feb-2003	19550	21436	16469	18705	26881	28970	26046	24484	39763	36761	3766	3981
22-Feb-2003	19537	19427	16272	18506	27072	30746	26024	22503	39383	38767	4643	4614
23-Feb-2003	19961	19747	16530	18501	27600	30855	24492	22564	39357	37721	4224	4736
24-Feb-2003	20174	23210	16432	19486	27592	28722	26421	22957	38191	37908	4334	4089
25-Feb-2003	20654	20511	16872	20093	28125	30231	26410	23499	36585	36902	4525	4439
26-Feb-2003	20591	20618	18659	22073	28361	32604	24451	22895	36910	35703	4895	5021
27-Feb-2003	21458	22081	20355	22616	28107	33770	24381	22805	38756	36564	5110	5348
28-Feb-2003	22493	23562	19958	22407	28885	32868	24645	25517	42088	40285	5361	5549
Total MU	555.180	538.152	519.292	591.984	773.290	794.584	727.098	665.036	1182.773	1131.042	151.902	157.078
Max. MWH	22493	23562	20749	24923	28931	33770	28683	29090	49363	51109	7206	8035
Min MWH	18321	13728	15622	15771	23917	23832	19673	20311	35659	33185	2165	230
Avg. MWH	19828	19220	18546	21142	27618	28378	25968	23751	42242	40394	5425	5610

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

Date	Himachal Pradesh		Jammu & Kashmir		Chandigarh		NFF		Railways		Figs. In MWH	
	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual		
1-Feb-2003	8427	8161	15474	17551	2599	3057	480	590	1008	1388	5091	8427
2-Feb-2003	8240	7992	15335	17818	2460	2798	480	599	1182	1345	4790	8240
3-Feb-2003	8345	8285	15431	18015	2538	2925	480	595	1467	1427	4829	8345
4-Feb-2003	8181	8211	15116	17821	2453	3006	480	605	1263	1449	6281	8181
5-Feb-2003	8382	8390	15384	18162	2498	2903	480	582	1784	1390	6287	8382
6-Feb-2003	8327	8400	15394	18391	2501	2867	480	619	1459	1377	6894	8327
7-Feb-2003	8272	8292	15493	18149	2507	2909	480	612	1438	1361	6763	8272
8-Feb-2003	8181	8304	14971	18027	2479	2785	480	614	1463	1502	6706	8181
9-Feb-2003	8157	7984	14979	18207	2392	2581	480	626	1506	1295	6738	8157
10-Feb-2003	8009	8082	15001	18170	2509	2781	480	619	1474	1388	6598	8009
11-Feb-2003	7221	7724	14957	17786	2743	2793	480	592	1485	1284	6835	7221
12-Feb-2003	7289	7851	14913	18664	2781	2755	480	595	1569	1253	7386	7289
13-Feb-2003	7481	8001	15013	18569	2739	2781	480	611	1572	1228	6829	7481
14-Feb-2003	7308	8028	14808	18220	2722	2696	480	591	1513	1454	7074	7308
15-Feb-2003	7508	7904	14799	18359	2672	2663	480	579	1185	1468	7474	7508
16-Feb-2003	7570	8209	15018	18455	2632	2505	480	584	1326	1518	8035	7570
17-Feb-2003	7869	8471	17083	16046	2684	2759	480	597	1460	1528	8018	7869
18-Feb-2003	8427	8006	17622	8574	2666	2605	480	611	1031	1427	4366	8427
19-Feb-2003	7420	5429	12447	5630	2668	2596	480	608	1194	1387	230	7420
20-Feb-2003	7727	7719	13217	9662	2412	2771	480	429	1063	1397	2077	7727
21-Feb-2003	7234	7872	13033	11096	2593	2782	480	441	1490	1287	3981	7234
22-Feb-2003	7578	8326	12645	11401	2547	2704	480	609	1242	1570	4614	7578
23-Feb-2003	7608	8645	14306	12143	2437	2406	480	608	1076	1385	4736	7608
24-Feb-2003	8116	8279	16422	11900	2581	2626	480	618	1210	1541	4089	8116
25-Feb-2003	7948	8139	15820	15361	2431	2632	480	611	1153	1549	4439	7948
26-Feb-2003	6941	7533	16944	16419	2144	2674	480	610	1196	1362	5021	6941
27-Feb-2003	7646	7756	19191	17619	2386	2619	480	604	1268	1327	5348	7646
28-Feb-2003	7735	8141	20180	15341	2569	2654	480	590	1253	1489	5549	7735
Total MU	219.147	224.134	430.996	441.556	71.343	76.633	13.440	16.549	37.330	39.376		
Max. MWH	8427	8645	20180	18664	2781	3057	480	626	1784	1570		
Min MWH	6941	5429	12447	5630	2144	2406	480	429	1008	1228		
Avg. MWH	7827	8005	15393	15770	2548	2737	480	591	1333	1406		

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-Feb-2003	43111	42889	20763	20577	15726	16231	7463	8222	7772	8323	11088	11752
2-Feb-2003	44040	44055	21840	21811	13645	14017	7794	8405	8129	8505	11033	11474
3-Feb-2003	44040	44085	21840	21952	14526	15131	7736	8563	8075	8522	11101	11673
4-Feb-2003	44040	44097	21840	21932	16356	16874	8415	8866	8277	8660	12293	12475
5-Feb-2003	43852	43918	21736	21832	16212	16590	8651	8609	8728	8900	13943	14752
6-Feb-2003	44040	44125	21840	21893	15745	16027	8248	8585	8604	8863	13373	13643
7-Feb-2003	43805	44098	21710	21980	17164	17537	9116	9215	9009	9123	15576	16553
8-Feb-2003	44040	44060	21840	21827	18264	18155	9116	9192	8837	8882	13217	13364
9-Feb-2003	44040	44092	21840	21919	16967	16307	9138	9222	8849	9111	12693	13750
10-Feb-2003	44040	44123	21840	21903	16487	16653	9109	9185	8948	8986	12700	13289
11-Feb-2003	44040	44211	21840	21897	15786	16327	8523	9151	8624	9017	14898	15212
12-Feb-2003	44040	44165	21840	21924	16019	17023	8872	9048	8650	8943	15330	15521
13-Feb-2003	44040	44146	21840	21880	17152	17393	9105	9177	8918	9106	16902	16966
14-Feb-2003	43960	44119	21548	21554	16434	16541	9105	9169	8896	9058	17312	17335
15-Feb-2003	43555	43596	21840	21936	16441	17087	9106	9205	8832	9122	15905	16686
16-Feb-2003	44040	44009	21790	21754	16066	16353	8982	9042	7103	6714	16131	16607
17-Feb-2003	43740	43487	21840	21217	15839	15411	8974	8708	8579	8513	15462	15214
18-Feb-2003	39056	38503	20128	18852	15389	14926	7780	7746	7371	7330	10949	10855
19-Feb-2003	40230	40311	19925	20247	9574	9639	4476	4533	4231	4153	10028	10041
20-Feb-2003	42212	42433	20956	21331	12054	12720	4357	4355	5324	5763	11753	13473
21-Feb-2003	42508	42652	21300	21325	14463	14753	6178	6725	8044	8205	12447	13720
22-Feb-2003	42975	43128	21125	21300	14426	14559	7322	7959	7522	7844	11602	12397
23-Feb-2003	42666	42571	20868	20831	14297	14323	7225	7694	7451	7690	11755	12152
24-Feb-2003	41634	41546	20814	20578	14376	14351	7182	7646	7469	7634	12185	12612
25-Feb-2003	42622	42944	20838	21220	14384	14625	7401	7842	7192	7941	11199	13741
26-Feb-2003	42583	43265	20854	21579	14689	15013	7377	8644	7363	8481	11297	14281
27-Feb-2003	43342	43887	21048	21511	14711	14860	7601	8577	7696	8260	12149	13136
28-Feb-2003	43567	43806	21003	21165	14382	14518	7615	8042	7649	7901	12474	14911
Total MU	1209.858	1212.321	598.486	599.727	427.574	433.944	221.967	231.327	222.142	229.550	366.795	387.585
Max. MWH	44040	44211	21840	21980	18264	18155	9138	9222	9009	9123	17312	17335
Min MWH	39056	38503	19925	18852	9574	9639	4357	4355	4231	4153	10028	10041
Avg. MWH	43209	43297	21375	21419	15271	15498	7927	8262	7934	8198	13100	13842

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

Date	Anta GPS		Auraiya GPS		NAPS		RAPS-B		Bairasiul	
	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual
1-Feb-2003	8776	8641	9729	9845	10080	10014	9600	9859	540	543
2-Feb-2003	8279	8412	9663	9671	10080	10088	9600	9847	540	570
3-Feb-2003	8113	8873	9593	9885	10080	10016	9600	9811	495	506
4-Feb-2003	8802	9042	10536	10557	10080	9963	9600	9791	420	442
5-Feb-2003	8489	9003	10778	10811	10080	9982	9600	9827	435	460
6-Feb-2003	9211	9469	10162	10214	10080	10049	9600	9807	450	474
7-Feb-2003	8735	8801	10778	10960	10008	9984	9600	9667	450	483
8-Feb-2003	9494	9432	11172	11130	10008	10001	9600	9811	405	420
9-Feb-2003	9032	9187	10750	10820	10080	10034	9600	9837	450	464
10-Feb-2003	9477	9486	10637	10704	10080	9957	9600	9748	435	451
11-Feb-2003	9019	9187	9978	10303	10080	10030	9600	9844	435	456
12-Feb-2003	9251	9342	10601	10949	10080	10055	9600	9972	420	441
13-Feb-2003	8746	8851	10679	10752	10104	9991	9600	9974	435	445
14-Feb-2003	9470	9407	11029	11061	10128	9939	9600	9928	465	430
15-Feb-2003	8897	9102	10671	10925	10128	9895	9600	9825	375	411
16-Feb-2003	9186	9164	11457	11419	9984	9984	9600	9907	630	645
17-Feb-2003	8740	8572	13035	12872	10008	9923	9600	9889	1575	1637
18-Feb-2003	7317	6766	10233	9825	10056	9925	9600	9630	2730	2706
19-Feb-2003	5916	6258	8380	8680	3502	2722	9600	8443	3000	3020
20-Feb-2003	8640	8850	10737	11363	0	-264	7000	6797	1845	1920
21-Feb-2003	8030	8222	10846	11061	3020	2515	4800	4843	1755	1800
22-Feb-2003	7854	8110	10366	10413	7990	7934	4800	4794	1590	1647
23-Feb-2003	7125	7191	9322	9407	9840	9617	7200	9138	1755	1821
24-Feb-2003	7174	7289	8868	9006	9960	9659	9600	9800	1935	2014
25-Feb-2003	6856	7038	8421	8624	9960	9835	8700	8846	1920	1997
26-Feb-2003	7184	7542	8251	8514	9768	9842	9600	9791	1755	1853
27-Feb-2003	5914	5979	9270	9356	9936	9811	9600	9777	1665	1717
28-Feb-2003	5771	5821	10925	10762	9936	9855	9600	9837	2160	2213
Total MU	229.498	233.037	286.867	289.889	255.136	251.356	253.300	259.040	31.065	31.986
Max. MWH	9494	9486	13035	12872	10128	10088	9600	9974	3000	3020
Min MWH	5771	5821	8251	8514	0	-264	4800	4794	375	411
Avg. MWH	8196	8323	10245	10353	9112	8977	9046	9251	1109	1142

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

Date	Salal		Tanakpur		Chamera		Uri		Bhakra Complex		Dehar	
	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual	Schedule	Actual
1-Feb-2003	2351	2379	750	789	2649	2726	2005	2017	13656	14279	3015	2705
2-Feb-2003	2206	2247	959	959	1736	1818	2024	2023	13656	13378	3015	2713
3-Feb-2003	2371	2399	690	695	1780	1848	2080	2092	13656	13535	3015	2856
4-Feb-2003	2187	2226	725	723	1580	1633	2068	2081	13656	13542	3015	2954
5-Feb-2003	2000	2044	689	691	1780	1835	1946	1952	13656	13620	3015	2918
6-Feb-2003	2144	2171	654	660	1780	1830	2002	2003	13656	13570	3015	2966
7-Feb-2003	2298	2344	640	648	1780	1824	2009	2008	13656	13379	3015	2292
8-Feb-2003	2142	2196	618	626	1789	1836	2024	2015	13656	13518	2306	2181
9-Feb-2003	2196	2237	632	637	1442	1463	1970	1983	13400	13500	2306	2573
10-Feb-2003	2150	2188	602	599	1776	1836	1957	1963	13400	13296	2618	2568
11-Feb-2003	2124	2151	594	600	1509	1587	1920	1926	13397	13392	2618	2490
12-Feb-2003	2032	2054	594	598	1189	1208	1808	1810	13396	13407	2501	2389
13-Feb-2003	2065	2078	576	581	1189	1244	1850	1853	13396	13349	2224	2205
14-Feb-2003	1950	1972	576	588	1189	1244	1727	1730	13396	13396	2224	2213
15-Feb-2003	1967	1984	576	581	1211	1260	1677	1690	13503	13357	2224	2200
16-Feb-2003	2331	2371	590	594	1033	1047	1780	1783	13601	13528	2224	2148
17-Feb-2003	6510	6575	576	576	1033	1077	2645	2643	13613	13691	2306	2238
18-Feb-2003	5541	5291	591	598	0	-2	5686	4810	13635	13577	2813	3945
19-Feb-2003	2583	2797	576	867	7610	7739	0	0	13618	11630	5038	4576
20-Feb-2003	3328	3493	1488	1473	3670	3785	0	0	11823	10668	3994	4073
21-Feb-2003	4470	4568	1255	1170	3634	3725	0	0	10700	9794	4508	3637
22-Feb-2003	4563	4652	1058	1068	3172	3216	0	0	8809	8782	3495	3028
23-Feb-2003	4791	4950	874	878	2656	2755	0	0	8491	8333	3191	2854
24-Feb-2003	7094	7152	989	987	2172	2254	0	0	8491	8403	3191	3751
25-Feb-2003	6533	6583	843	856	2560	2637	0	0	8491	8325	4037	3644
26-Feb-2003	6226	6341	894	903	3761	3868	2681	2694	8491	8394	3016	2960
27-Feb-2003	5975	6054	770	785	2784	2909	11288	11420	8491	8384	3538	3200
28-Feb-2003	8836	8931	792	796	3474	3604	10883	10466	8491	8307	3538	3325
Total MU	100.964	102.428	21.171	21.526	61.938	63.806	64.030	62.962	339.881	334.334	85.015	81.602
Max. MWH	8836	8931	1488	1473	7610	7739	11288	11420	13656	14279	5038	4576
Min MWH	1950	1972	576	576	0	-2	0	0	8491	8307	2224	2148
Avg. MWH	3606	3658	756	769	2212	2279	2287	2249	12139	11941	3036	2914

X. Daily Generation Details of State Sector Stations

(All Figs In MU's)													
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	30.08	6.19	15.02	0.48	31.13	0.00	50.12	1.69	6.38	8.14	1.28	1.66	152.33
02	32.74	4.46	15.51	0.50	36.78	0.15	56.46	1.10	6.50	10.59	1.44	1.66	168.08
03	33.26	4.05	16.89	0.43	39.45	0.15	53.94	2.27	6.45	11.15	1.44	1.66	171.32
04	34.76	5.04	15.95	0.40	37.23	0.25	51.14	3.41	4.65	11.09	1.44	1.66	167.20
05	35.78	5.58	13.16	0.44	40.47	0.15	49.12	2.98	4.28	11.32	1.22	1.27	165.94
06	35.78	5.58	13.16	0.44	40.47	0.15	49.12	2.98	4.28	11.32	1.22	1.27	165.94
07	36.81	5.23	12.79	0.38	39.96	0.15	46.19	3.81	4.51	11.10	1.25	1.19	163.53
08	35.47	5.42	17.63	0.44	38.87	0.00	48.44	3.25	4.48	12.29	1.25	1.19	168.88
09	31.10	5.74	13.05	0.41	40.63	0.40	49.19	2.86	4.28	12.28	1.25	1.19	162.55
10	30.85	6.01	16.38	0.39	39.35	0.15	48.58	3.32	4.33	12.81	1.25	1.19	164.77
11	28.82	6.41	17.99	0.41	36.55	0.15	51.45	3.20	3.81	13.18	1.23	1.19	164.56
12	30.57	7.41	16.04	0.39	37.51	0.15	48.48	3.40	3.43	12.36	1.23	1.19	162.32
13	33.08	6.15	16.11	0.38	35.38	0.77	47.45	3.64	3.44	11.86	1.78	1.39	161.59
14	35.63	6.19	18.04	0.37	41.10	0.66	46.99	4.53	3.34	10.79	1.18	1.19	170.17
15	35.44	7.21	17.57	0.29	41.08	0.00	47.70	4.35	3.56	10.92	1.18	1.19	170.66
16	35.42	5.29	17.89	0.00	37.57	0.15	47.04	4.53	3.41	10.95	1.14	1.19	164.74
17	29.24	4.62	16.55	0.00	36.10	0.15	43.49	4.40	3.34	10.71	1.14	1.19	151.09
18	13.18	5.04	12.46	0.04	16.76	0.15	39.24	3.30	3.34	9.63	1.29	1.19	105.77
19	8.46	5.38	12.29	0.56	7.02	0.15	27.22	3.39	6.78	10.02	1.56	1.19	84.19
20	21.43	6.12	12.01	0.00	23.68	0.38	42.90	4.38	7.88	12.67	1.85	1.19	134.64
21	26.03	5.35	14.20	0.64	27.56	0.25	48.13	3.21	6.61	12.13	1.78	1.19	147.24
22	26.95	6.38	15.02	0.59	28.25	0.00	50.46	2.70	5.94	11.10	1.64	1.19	150.40
23	24.45	5.01	13.58	0.59	29.42	0.00	52.40	2.90	5.71	12.34	1.64	1.19	149.40
24	21.82	4.14	14.26	0.61	35.73	0.15	51.75	3.28	6.00	12.03	1.21	1.19	152.33
25	26.61	5.64	13.09	0.63	35.99	0.15	51.91	3.03	5.83	11.49	1.55	1.19	157.27
26	31.14	2.87	14.57	0.59	31.47	0.15	55.14	2.53	5.35	12.29	1.50	1.19	158.96
27	31.83	2.59	13.52	0.53	30.24	0.15	56.93	2.42	5.08	12.15	1.62	1.19	158.41
28	30.85	4.15	14.14	0.55	31.84	0.25	54.14	2.35	5.18	10.35	1.98	1.19	157.13
29													
30													
31													
Maximum	36.81	7.41	18.04	0.64	41.10	0.77	56.93	4.53	7.88	13.18	1.98	1.66	171.32
Minimum	8.46	2.59	12.01	0.00	7.02	0.00	27.22	1.10	3.34	8.14	1.14	1.19	84.19
Average	29.56	5.33	14.96	0.41	33.84	0.19	48.75	3.19	4.93	11.39	1.41	1.27	155.41
Month Total	827.58	149.27	418.88	11.48	947.59	5.33	1365.11	89.21	138.18	319.05	39.56	35.52	4351.42

XI. Performance Of Generating Stations

S.No.	Power Station	Effective Capacity MW	Energy Generated during	Cummulative from 01.04.2002
			Feb, 2003 (Ex Bus MU)	(Ex-bus MU)
1	CENTRAL SECTOR			
A	NTPC (Thermal)			
(a)	Badarpur TPS	705.00	342.30	4462.19
(b)	Singrauli STPS	2000.00	1212.32	13801.23
(c)	Rihand STPS	1000.00	599.73	6465.89
(d)	Dadri NCTPS	840.00	433.94	5198.31
(e)	Unchahar-I TPS	420.00	231.33	2558.52
(f)	Unchahar-II TPS	420.00	229.55	2570.75
(g)	Tanda TPS	440.00	115.37	1770.01
(h)	Anta GPS	419.33	233.04	2451.55
(i)	Auraiya GPS	663.36	289.89	3845.88
(j)	Dadri GPS	829.78	387.58	4658.88
(k)	Faridabad GPS	431.57	184.41	2347.73
	Total NTPC	8169.04	4259.46	50130.94
B	NHPC			
(a)	Bairasiul	180.00	31.99	567.97
(b)	Salal	690.00	102.43	2907.11
(c)	Tanakpur HPS	94.20	21.53	392.17
(d)	Chamera HPS	540.00	62.81	2032.21
(e)	Uri HPS	480.00	62.96	2080.16
	Total NHPC	1984.20	281.72	7979.61
C	NPC			
(a)	RAPS -A	300.00	116.29	1255.33
(b)	RAPS -B	440.00	259.04	2818.63
(c)	NAPS	440.00	251.36	2916.87
	Total NPC	1180.00	626.69	6990.83
2	JOINTLY OWNED (BBMB)			
(a)	Bhakra Complex	1490.15	334.33	6101.52
(b)	Dehar	990.00	81.60	3071.22
(c)	Pong	384.00	29.08	700.85
	Total BBMB	2864.15	445.01	9873.59
3	DELHI			
(a)	Indra Prastha	247.50	73.55	515.12
(b)	Rajghat	149.00	55.14	673.87
(c)	Gas Turbines	282.00	90.76	1086.15
(d)	Pragati Gas	330.00	103.36	703.46
	Total DELHI	1008.50	322.81	2978.59
4	HARYANA			
(a)	WYC	48.00	12.38	224.09
(b)	Faridabad (New)	165.00	63.98	772.57
(c)	Panipat	860.00	356.69	3986.05
(d)	Magnum Diesel(IPP)	25.20	5.90	74.63
	Total Haryana	1098.20	438.94	5057.35

contd/-

5	HP			
(a)	Giri	60.00	9.97	156.03
(b)	Bassi	60.00	6.28	260.14
(c)	Binwa	6.00	1.31	20.48
(d)	Rongtong (+Nogli+Micro+Thirot+Sal-2)	15.25	1.35	22.18
(e)	Andhra	16.95	1.47	66.40
(f)	Bhabha (H)	120.00	12.41	520.34
(g)	Baner (H)	12.00	1.55	28.61
(h)	Gaj (H)	10.50	2.13	34.41
(i)	Gumma	3.00	0.27	
(j)	Ghanvi	22.50	1.82	76.82
(k)	Malana (IPP)	86.00	4.69	320.31
	Total HP	412.20	43.25	1505.71
6	J & K			
(a)	Lower Jhelum	105.00	0.00	3.33
(b)	Upper Sindh	127.60	10.92	290.44
(c)	Ganderbal	15.00	1.19	20.95
(d)	Mohra	9.00	0.00	0.00
(e)	Chenani	32.80	3.39	59.36
(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	4.42	19.26
(k)	Pampore GT St - II	100.00	10.46	45.45
	Total J & K	493.87	30.37	438.78
7	PUNJAB			
(a)	Jogindernagar/ Shanan	110.00	10.99	448.51
(b)	UBDC	90.00	21.86	370.96
(c)	Mukerian	207.00	33.01	748.75
(d)	Anandpur Sahib (APS)	134.00	15.37	718.97
(e)	Ranjit Sagar HPS	600.00	66.81	1072.70
(f)	Small Hydel	4.10	0.33	8.19
(g)	GNDTPS (Bhatinda)	440.00	181.21	2109.62
(h)	GGSTPS (Ropar)	1260.00	487.32	7090.69
(i)	Jhalkeeri Rice Straw Fired	10.00	0.00	0.00
(j)	Lehra Mohabbat TPS	420.00	153.40	2440.50
	Total Punjab	3275.10	970.30	15008.89
8	RAJASTHAN			
(a)	Mahi Bajaj Sagar	140.00	0.00	21.87
(b)	Rana Pratap Sagar (RPS)	172.00	1.06	9.27
(c)	Jawahar Sagar (JS)	99.00	1.27	16.23
(d)	Anoopgarh	9.00	0.19	4.70
(e)	Small Hydro	14.85	0.71	6.31
(f)	Kota TPS	850.00	465.71	5347.23
(g)	RAMGARH GT	3.00	0.00	
(h)	RAMGARH GT EXT	35.50	19.25	193.62
(i)	Suratgarh TPS	1000.00	526.32	5973.80
(j)	Wind Farm	14.01	2.43	39.80
	Total Rajasthan	2337.36	1016.94	11612.83

contd/-

9	U.P.			
	<u>HYDRO</u>			
(a)	Rihand	300.00	46.27	545.57
(b)	Obra	99.00	18.51	224.95
(c)	Matatilla	30.00	7.40	98.53
(d)	Ganga Canal	10.70		
(e)	Small hydro	18.20		
(f)	Khara	72.00	16.65	382.41
	Total U.P. (Hydro)	529.90	88.83	1251.45
	<u>THERMAL</u>			
(e)	Obra	1442.00	457.27	5213.83
(f)	Panki	242.00	84.84	794.56
(g)	Harduaganj	375.00	36.16	629.62
(h)	Paricha	220.00	68.01	727.40
(i)	Anpara	1630.00	724.96	9376.29
	Total U.P. (Thermal)	3909.00	1371.24	16741.71
	Total U.P.	4438.90	1460.07	17993.16
10	UTTRANCHAL			
(a)	Khatima	41.40	9.07	148.72
(b)	Ramganga	198.00	21.27	151.48
(c)	Ganga Canal	32.70	8.85	125.60
(d)	Yamuna (I & IV)	114.75	23.13	555.16
(e)	Chibro	240.00	29.73	815.81
(f)	Khodri	120.00	15.25	381.05
(g)	Chilla	144.00	9.85	572.65
(h)	Maneri Bhali	90.00	23.59	420.60
	Total Uttranchal	980.85	140.74	3171.07
11	CHANDIGARH			
	Diesel gen set	1.40		
	Total Region	28243.77	10036.30	132741.35

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. Inter Regional Exchanges During February 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	Peak MW	Off Peak MW	Max Import	Max Export	Energy Import	Energy Export	Net
01	0	-450	0	450	0	2.90	-2.90	-30	-23	0	0	0.00	0.82	-0.82
02	0	-450	0	450	0.00	2.70	-2.70	-50	-50	0	0	0.00	1.04	-1.04
03	0	-450	0	450	0.00	2.07	-2.07	-35	-35	0	35	0.00	1.32	-1.32
04	50	-450	0	450	1.64	2.22	-0.58	-47	-46	0	50	0.00	1.22	-1.22
05	50	-200	250	200	0.79	1.47	-0.68	-32	-48	0	48	0.00	1.06	-1.06
06	50	-200	250	200	0.79	1.47	-0.68	-32	-48	0	48	0.00	1.06	-1.06
07	-50	-250	50	250	0.83	1.56	-0.74	-32	-48	0	48	0.00	1.11	-1.11
08	50	-250	50	250	0.77	1.80	-1.02	-34	-50	0	50	0.00	1.09	-1.09
09	35	-200	35	225	0.73	1.84	-1.10	-35	-50	0	50	0.00	1.23	-1.23
10	50	-240	50	325	0.74	1.94	-1.20	-50	-58	0	50	0.00	1.27	-1.27
11	0	-250	50	250	0.46	2.01	-1.55	-50	-55	0	55	0.00	1.23	-1.23
12	0	-250	50	300	0.13	2.34	-2.21	-51	-50	0	55	0.00	1.40	-1.40
13	0	-300	0	300	0.00	2.31	-2.31	-35	-60	0	70	0.00	1.18	-1.18
14	0	-300	0	300	0.00	2.45	-2.45	-33	-55	0	66	0.00	0.91	-0.91
15	0	-300	0	300	0.00	2.03	-2.03	-47	-37	0	59	0.00	0.99	-0.99
16	0	-300	0	300	0.00	3.17	-3.17	-40	-40	0	57	0.00	0.96	-0.96
17	-100	-150	0	300	0.00	4.78	-4.78	0	-60	0	60	0.00	0.63	-0.63
18	-42	-340	0	400	0.00	4.20	-4.20	0	0	0	60	0.00	0.00	0.00
19	0	-150	0	400	0.00	1.82	-1.82	-7	0	0	15	0.00	0.04	-0.04
20	0	-300	0	350	0.00	2.28	-2.28	-51	-48	0	-56	0.00	1.07	-1.07
21	0	-300	0	300	0.00	2.25	-2.25	-46	-41	0	-54	0.00	1.04	-1.04
22	0	-250	0	-250	0.00	2.22	-2.22	-45	-45	0	-55	0.00	1.12	-1.12
23	0	-250	0	-250	0.00	3.17	-3.17	-46	-44	0	-55	0.00	1.18	-1.18
24	-100	-250	0	-250	0.00	4.08	-4.08	-38	-38	0	-38	0.00	0.91	-0.91
25	-50	-250	0	-300	0.00	2.95	-2.95	-38	-38	0	-38	0.00	0.90	-0.90
26	0	-100	0	-300	0.00	2.47	-2.47	-38	-38	0	-38	0.00	1.06	-1.06
27	0	-250	0	-300	0.00	2.23	-2.23	0	0	0	-38	0.00	0.00	0.00
28	0	-350	0	-400	0.00	3.75	-3.75	-22	-20	0	-25	0.00	0.45	-0.45
29														
30														
31														
Maximum	50	-100	250	450	1.64	4.78	-0.58	0	0	0	70	0.00	1.40	0.00
Minimum	-100	-450	0	-400	0.00	1.47	-4.78	-51	-60	0	-56	0.00	0.00	-1.40
Average	-2	-271	29	157	0.26	2.50	-2.25	-35	-41	0	18	0.00	0.94	-0.94
Total					6.89	70.47	-63.58					0.00	26.27	-26.27

XII. Inter Regional Exchanges During February 2003 (Sheet 2 of 2)

2 of 2

Date	With WR Over Ujjain - Kota {Export(-)/Import(+)}							With ER {Export(-)/Import(+)}						
	Peak MW MW	Off Peak MW MW	Max Import MW	Max Export MW	Energy Import MU	Energy Export MU	Net MU	Peak MW MW	Off Peak MW MW	Max Import MW	Max Export MW	Energy Import MU	Energy Export MU	Net MU
01	0	0	0	0	0.00	0.00	0.00	-167	303	365	200	1.51	0.16	1.35
02	0	0	0	0	0.00	0.00	0.00	-180	-200	0	280	0.00	4.00	-4.00
03	0	0	0	0	0.00	0.00	0.00	-180	-200	0	280	0.00	3.80	-3.80
04	0	0	0	0	0.00	0.00	0.00	-180	-155	0	280	0.00	3.92	-3.92
05	0	0	0	0	0.00	0.00	0.00	-140	-160	0	230	0.00	4.11	-4.11
06	0	0	0	0	0.00	0.00	0.00	-140	-160	0	160	0.00	4.11	-4.11
07	0	0	0	0	0.00	0.00	0.00	-150	-140	0	160	0.00	3.78	-3.78
08	0	0	0	0	0.00	0.00	0.00	-187	-169	0	187	0.00	4.23	-4.23
09	0	0	0	0	0.00	0.00	0.00	-180	-125	0	180	0.00	2.65	-2.65
10	0	0	0	0	0.00	0.00	0.00	0	0	0	0	0.00	0.00	0.00
11	0	0	0	0	0.00	0.00	0.00	104	50	163	0	2.54	0.00	2.54
12	0	0	0	0	0.00	0.00	0.00	260	363	370	0	6.17	0.00	6.17
13	0	0	0	0	0.00	0.00	0.00	260	365	370	0	6.07	0.00	6.07
14	0	0	0	0	0.00	0.00	0.00	353	353	370	0	8.65	0.00	8.65
15	0	0	0	0	0.00	0.00	0.00	355	355	355	0	8.75	0.00	8.75
16	0	0	0	0	0.00	0.00	0.00	305	335	335	0	8.32	0.00	8.32
17	0	0	0	0	0.00	0.00	0.00	0	360	373	0	7.18	0.00	7.18
18	0	0	0	0	0.00	0.00	0.00	0	238	238	0	0.00	0.00	0.00
19	0	0	0	0	0.00	0.00	0.00	303	0	403	0	2.44	0.00	2.44
20	0	0	0	0	0.00	0.00	0.00	303	303	303	0	7.34	0.00	7.34
21	0	0	0	0	0.00	0.00	0.00	312	303	350	0	7.14	0.00	7.14
22	0	0	0	0	0.00	0.00	0.00	297	303	303	0	7.02	0.00	7.02
23	0	0	0	0	0.00	0.00	0.00	303	303	303	0	7.07	0.00	7.07
24	0	0	0	0	0.00	0.00	0.00	303	303	303	0	7.36	0.00	7.36
25	0	0	0	0	0.00	0.00	0.00	303	303	303	0	7.29	0.00	7.29
26	0	0	0	0	0.00	0.00	0.00	0	300	300	0	3.54	0.00	3.54
27	0	0	0	0	0.00	0.00	0.00	0	50	82	0	0.45	0.00	0.45
28	0	0	0	0	0.00	0.00	0.00	143	112	300	0	2.49	0.00	2.49
29														
30														
31														
Maximum	0	0	0	0	0.00	0.00	0.00	355	365	403	280	8.75	4.23	8.75
Minimum	0	0	0	0	0.00	0.00	0.00	-187	-200	0	0	0.00	0.00	-4.23
Average	0	0	0	0	0.00	0.00	0.00	86	132	210	70	3.62	1.10	2.52
Total					0.00	0.00	0.00					101.35	30.76	70.59

XIII. Progress Of Installation Of Shunt Capacitors As On 28.02.2003**(ALL FIGS IN MVar)**

CONSTITUENT	REQUIREMENT AT THE END OF 2002-03	CAPACITORS AS ON 28.02.2003	CAPACITORS ADDITION DURING		ADDITIONAL REQUIRED DURING 2002-03
		INSTALLED	2001-02	2002 - 03	
Chandigarh	116	92	7	0	24
Delhi	2932	2755	397	122	177
Haryana	2797	2489	416	137	308
H.P.	319	278	57	73	41
J & K	924	147	12	0	777
Punjab	5107	4706	199	76	401
Rajasthan	2695	2676	59	199	19
U.P.	5225	4951	485	260	274
Uttranchal	286				286
BBMB	360	381	0	0	0
TOTAL	20761	18475	1632	867	2307

SOURCE: Minutes of 338th OCC meeting of NREB held on 10th March, 2003.

XIV. Hydraulic Data For Reservoirs During February 2003

Item	Bhakra	Pong	Rihand	R.P.S.	Gandhi Sagar (M.P.)
Full Reservoir Level (m) (FRL) (ft)	514.50 1688.00	433.12 1421.00	268.22 880.00	352.65 1157.00	402.64 1321.00
Min. Draw Down Level (m) (MDDL) (ft)	445.62 1462.00	384.05 1260.00	252.98 830.00	342.90 1125.00	381.00 1250.00
Level on last day of February 2003 (m)	469.88 1541.61	400.14 1312.79	260.02 853.10	347.11 1138.80	379.62 1245.48
Level on last day of February 2002 (m)	469.72 1541.09	398.59 1307.70	261.24 857.10	345.47 1133.42	380.63 1248.79
Live Capacity as on (mhmt) last day of February 2003 (maft)	0.17 1.35	0.17 1.40	0.22 1.80	0.06 0.48	0.00 0.00
Live Capacity as on (mhmt) last day of February 2002(maft)	0.16 1.32	0.16 1.26	0.28 2.25	0.07 0.60	0.00 0.00
Energy content as on last day of February 2003 (MU)	610.00	250.00	425.00	97.00	0.00
Energy content as on last day of February 2002 (MU)	600.00	210.00	525.00	35.00	0.00
Maximum level (m) (ft) (date)	476.62 1563.70 01.02.2003	400.21 1313.03 01.02.2003	260.82 855.70 01.02.2003	347.11 1138.80 28.02.2003	379.62 1245.48 01.02.2003
Minimum level (m) (ft) (date)	469.88 1541.61 28.02.2003	400.02 1312.40 18.02.2003	260.02 853.10 28.02.2003	347.10 1138.78 01.02.2003	379.42 1244.80 28.02.2003

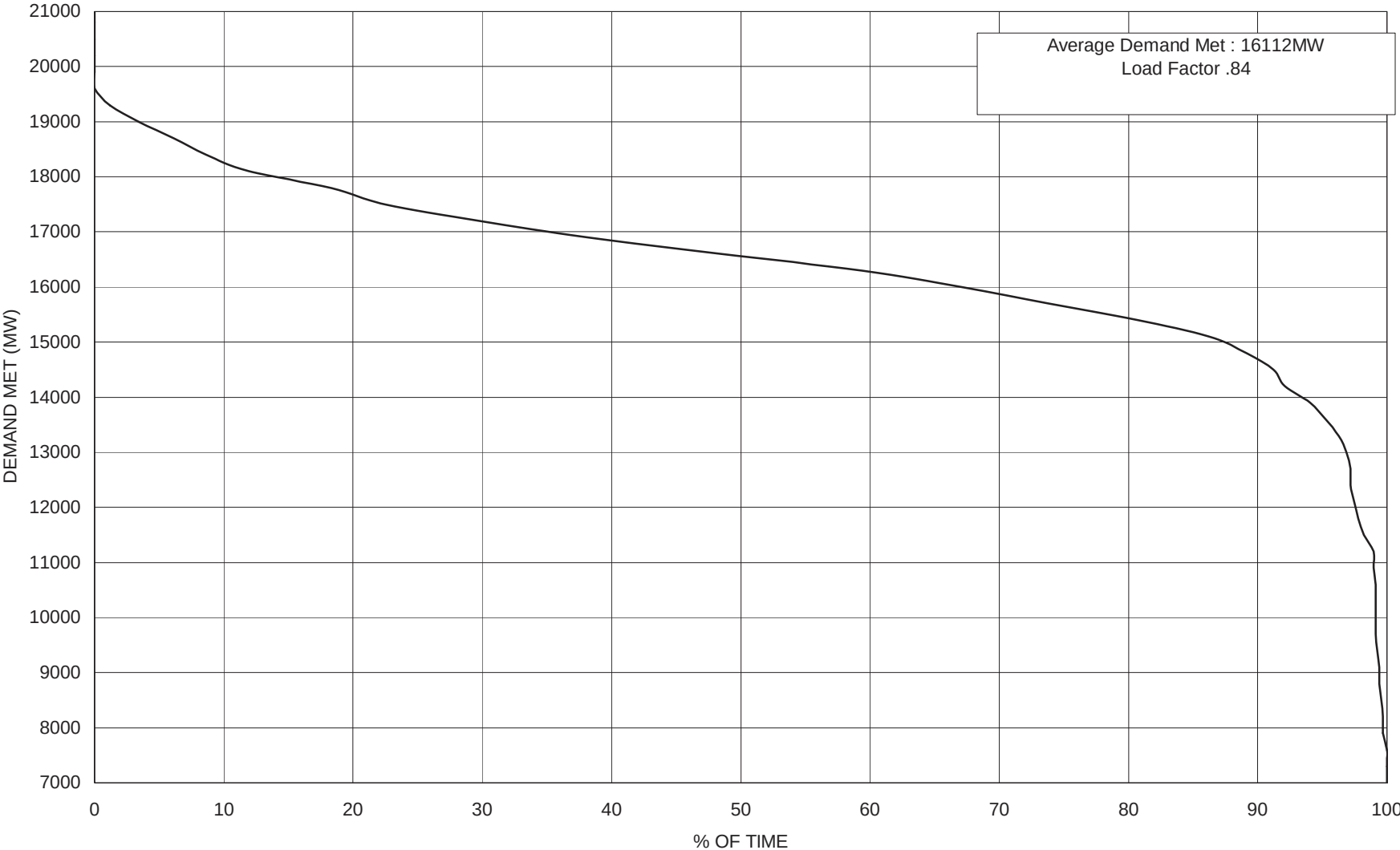
Energy content of Bhakra : Total Energy content at Bhakra, Ganguwal and Kotla power stations

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

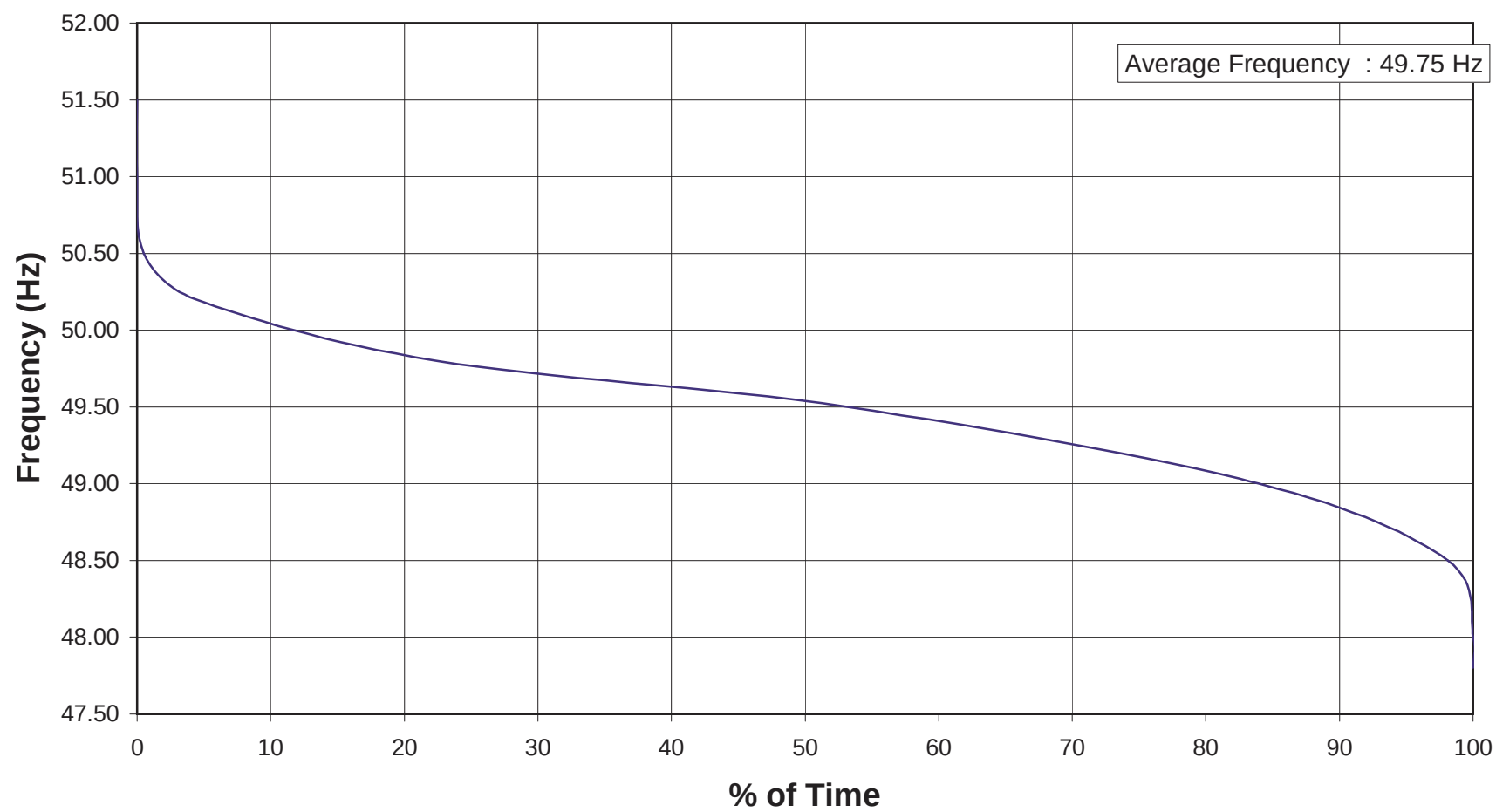
Energy content of RPS : Total Energy content of Rana Pratap Sagar and Jawahar Sagar Power Stations.

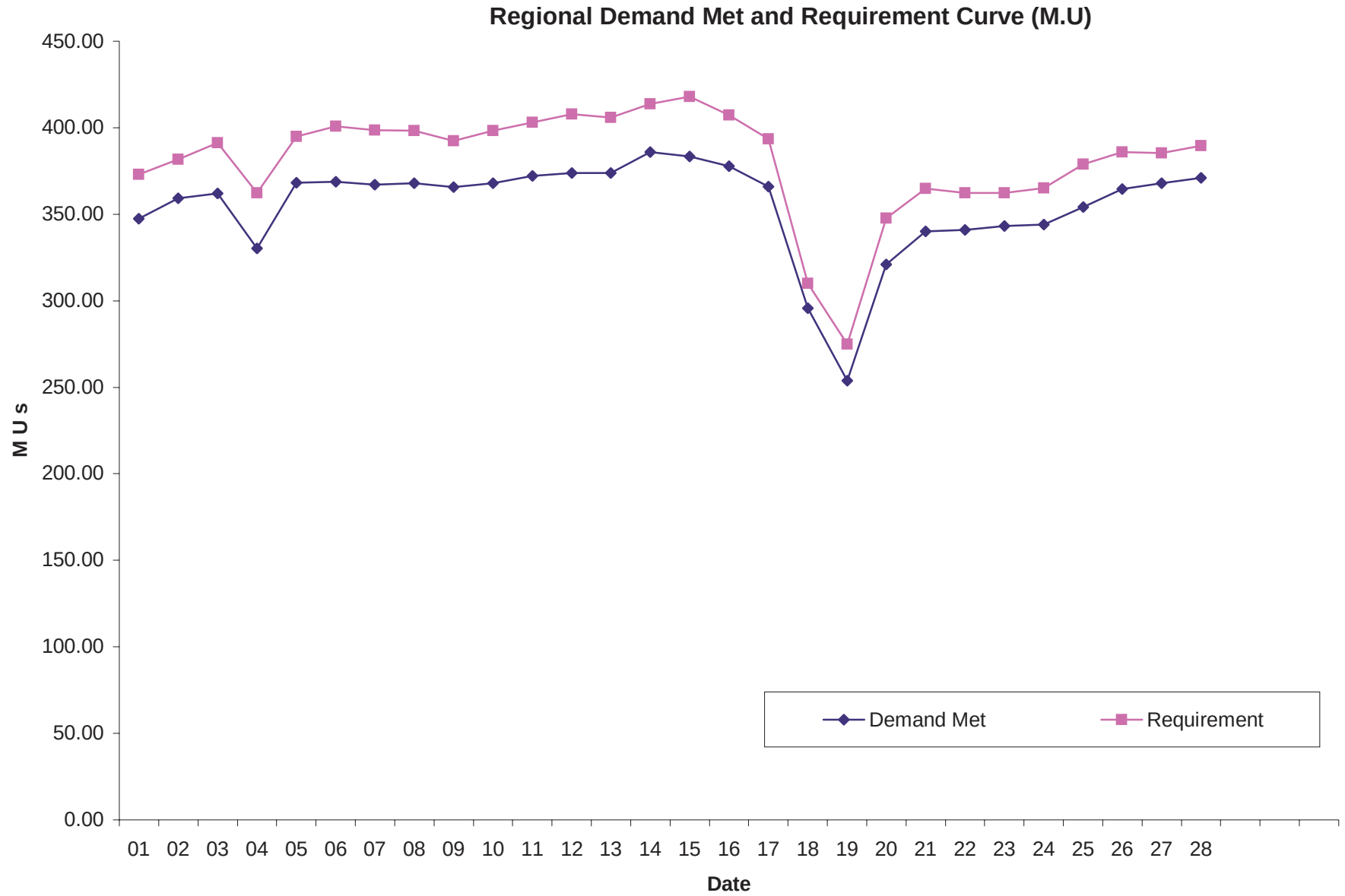
Energy Content of G. Sagar : Total Energy content at Gandhi Sagar, RP Sagar and Jawahar Sagar Power Stations.

Load Duration Curve For Northern Region For February 2003



Frequency Duration Curve For Northern Region For February 2003





BRIEF DETAILS OF THE LOAD CRASH IN NORTHERN REGION DURING 18TH/19TH FEBRUARY 2003

There was an unprecedentedly high load crash of more than 10,000 MW in the Northern Grid in the night of 18th/19th February 2003 due to wide spread rains and heavy storm in the region. The demand in the grid was already running low for the last 1-2 days due to rains in some part of the region notably in Punjab, Haryana & Rajasthan. This resulted in closing down of some of the generating units to the tune of 2290 MW prior to the night of 18 th/19th Feb. 2003. In spite of closing down of the generating units in advance, high frequency and voltage continued throughout the night. In order to control the frequency additional generating units to the tune of 5000 MW were closed. Backing down was also carried out on almost all of the generating units to the maximum extent possible level. The system size thus came down to about 7000 MW as contrasted to 17-18000 MW on fair weather nights. Due to load crash and closing down of units, the loading on HV and EHV transmission circuits also kept on reducing and touching extremely low levels. This resulted in critically high voltages throughout the region and in spite of taking all the possible measures viz. switching-in of reactors and switching out of capacitors, opening of lightly loaded parallel transmission ckts change in the transformers tap position etc., the voltages at supergrid level continued to remain high. Consequently, a large number of 400 kV transmission ckts tripped on over voltage protection, thereby aggravating the system contingency. Due to tripping of large number of transmission lines, redundancy in most of the corridors had been severely reduced or lost and consistent efforts were put in by NRLDC to keep the whole system integrated. In view of the above during the night for a considerable period, the grid continued to remain in a critical stage and narrowly escaped from a major grid disturbance.