GRID REPORT

MARCH 2002

SYSTEM OPERATION REPORT OF NORTHERN REGION FOR THE MONTH OF MARCH, 2002

A. SUMMARY REPORT:

I Important events:

(a) Commissioning of new units /lines/transformers during the month.

Suratgarh #4 (250 MW) of RRVUNL synchronized on 25/03/2002 at 19:10 hrs.

(b) Major problems / constraints affecting grid operation including major grid disturbances.

The average system frequency during the month of March 2002 was 50.22 Hz and frequency remained between 49.0 & 50.5 Hz for 67.20 % of time. The system voltage condition was satisfactory.

There was no transmission constraint during the month except on few occasions when generation backing down had done in Uri HEP due to outage of 400 kV Uri-Wagoora D/C line or one ckt of 220 kV Wagoora-Pampore D/C line.

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There was no major grid disturbance in the region during March 2002.

c) Important decisions taken during the month in various meeting / other forums.

NIL

II. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING MARCH 2002

(All figs. in MU)

Sl. No.	State/UT/ System	NTPC (Excl. BTPS, Tanda & FGPS) Entitlement	Actual	NHPC Entitlement	Actual	NPC (Excl. RAPS-A) Entitlement	Actual	BBMB Entitlement	Actual	TOTALS Entitlement	Actual
1	Chandigarh	37.74	25.13	7.35	7.0	3.94	0.11	44.18	44.09	93.20	76.29
2	Delhi	756.15	711.40	69.78	70.22	69.74	40.51	0.00	0.00	895.66	822.13
3	Haryana	373.99	384.00	80.12	80.53	27.61	59.23	190.37	191.47	672.09	715.23
4	H.P.	92.74	86.49	37.05	37.21	13.84	5.77	19.48	19.55	163.10	149.01
5	J & K	261.61	279.45	163.45	164.01	108.43	54.14	0.00	0.00	533.49	497.60
6	Punjab	393.64	367.33	128.54	129.15	33.61	24.27	271.87	273.39	827.66	794.15
7	Rajasthan	637.87	671.46	56.88	57.37	220.50	254.93	156.33	156.85	1071.58	1140.60
8	U.P.	1404.19	1461.27	117.37	115.08	106.31	145.00	0.00	0.00	1627.87	1721.35
9	MP / N.F.F.	4.91	15.73	0.00	0.00	0.00	0.00	14.88	11.77	19.79	27.51
10	Bihar	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
11	Trans. Losses	106.02	105.92	11.01	11.01	10.55	10.55	35.81	35.80	163.38	163.28
12	Others	73.44	33.97	0.00	0.00	0.00	0.00	0.00	0.00	73.44	33.97
	Total	**4142.28**	**4142.28**	**671.55**	**671.55**	**594.52**	**594.52**	**732.91**	**732.91**	**6141.26**	**6141.26**

III. INTER REGIONAL EXCHANGES IN *MU* AND PEAK *MW*

		Energy (MU)	Peak MW
a.	Import over HVDC Back to Back at Vindhyachal	10.33	125
b.	M.P. to Rajasthan(Ujjain - Kota)	0.00	0
c.	Eastern region to Northern region (Import)	171.86	360
d.	Export over HVDC Back to Back at Vindhyachal	85.61	500
e.	220 KV Auraiya -Malanpur	14.76	27
f.	Northern region to Bihar (Export)	0.00	0
g.	Tanakpur to Mahendranagar(NEPAL) (Export)	5.17	11

IV. FREQUENCY PROFILE

a. Maximum frequency	51.36	Hz	at	18:09	hours on	23.03.2002
Minimum frequency	48.24	Hz	at	19:29	hours on	05.03.2002
Average frequency	50.22	Hz				

b. Frequency distribution in %

Hz	< 48.5	<49.0	49.0-50.5	> 50.5
%	0.07	0.69	67.27	32.04

c. Frequency Variation Index

Monthly Average	2.30
Maximum	3.28
Minimum	1.19

V. POWER SUPPLY POSITION IN NORTHERN REGION

a. Average Energy/day (Net)

State / U.T.	Availability MU/Day	Requirement MU/Day	Shortage MU/Day	Shortage %
Chandigarh	2.46	2.46	0.00	0.00
Delhi	44.58	45.19	0.61	1.35
Haryana	46.39	46.43	0.04	0.09
H.P.	8.85	8.85	0.00	0.00
J & K	17.84	19.60	1.76	8.98
Punjab	65.88	66.44	0.56	0.84
Rajasthan	71.60	72.45	0.85	1.17
U.P.	121.85	135.86	14.01	10.31
N.F.F./Rail	1.35	1.35	0.00	0.00
Total	**380.80**	**398.63**	**17.83**	**4.47**

b. Peak MW

State / U.T.	MAX. Availability MW	MAX. Requirement MW	Shortage MW		Shortage %	
			ARITH-METICAL	AT MAXM. REQT HR	ARITH-METICAL	AT MAXM. REQT HR
	A	B	C=B-A	D	(C/B)*100	(D/B)*100
Chandigarh	151	151	0	0	0.00	0.00
Delhi	2575	2605	30	271	1.15	10.40
Haryana	2655	2655	0	0	0.00	0.00
H.P. *	520	520	0	0	0.00	0.00
J & K *	946	1149	203	300	17.67	26.11
Punjab	3661	3908	247	247	6.32	6.32
Rajasthan	3657	3657	0	0	0.00	0.00
U.P.	6399	6977	578	623	8.28	8.93
N.F.F./Rail	66	66	0	0	0.00	0.00
Region	**19937**	**21481**	**1544**	**1544**	**7.19**	**7.19**

Diversity Factor = **1.09**

* Approximate and Estimated

B. DETAILED REPORT

I. 1. INSTALLED / EFFECTIVE CAPACITY AT THE END OF MARCH 2002

-	STATION	INSTALLED CAPACITY (MW)		EFFECTIVE CAPACITY	
1	**CENTRAL SECTOR**				
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	4x60 + 2x66	372.00	4x60 + 2x66	372.00
	Total BBMB		**2852.15**		**2852.15**
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
	Total DELHI		**679.50**		**678.50**
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		9.22		8.52
(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		0.13		0.13
(o)	Malana(IPP)	2x43	86.00	2x43	86.00
	Total HP		**412.80**		**412.10**
7	**J & K**				
	HYDRO				
(a)	Lower Jhelum	3x35.0	105.00	3x35.0	105.00
(b)	Upper Sindh	2x11.30+1x35.0	57.60	2x11.30+1x35.0	57.60
(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	25.30	5x4.66 +2X1.0	25.30
(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
	Total Hydro		**225.19**		**225.19**
	J & K (Contd.)				
	GAS TURBINES				
(h)	Pampore GT St - I	3x25.0	75.00	3x25.0	75.00
	Pampore GT St - II	4x25.0	100.00	4x25.0	100.00
	Total Gas		175.00		175.00

(I)	Diesel Gen. Sets		8.94		7.18
	Total J & K		**409.13**		**407.37**
8	**PUNJAB**				
	HYDRO				
(a)	Jogindernagar/ Shanan	4x15+1x50	110.00	4x15+1x50	110.00
(b)	Upper Behari Doab Canal (UBDC)	3x15+3x15	90.00	3x15+3x15	90.00
(c)	Mukerian	6x15+6x19.5	207.00	6x15+6x19.5	207.00
(d)	Anandpur Sahib (APS)	4x33.5	134.00	4x33.5	134.00
(e)	Ranjit Sagar HPS	4x150	600.00	4x150	600.00
(f)	Small Hydel		4.10		4.10
	Total Hydro		1145.10		1145.10
	THERMAL				
(g)	Guru Nanak Dev TPS (Bhatinda)	4x110	440.00	4x110	440.00
(h)	Guru Gobind Singh TPS (Ropar)	6x210	1260.00	6x210	1260.00
(i)	Lehra Mohabbat TPS	2x210	420.00	2x210	420.00
(j)	Jhalkeri Rice Straw Fired	1x10	10.00	1x10	10.00
	Total Thermal		2130.00		2130.00
	Total Punjab		**3275.10**		**3275.10**
9	**RAJASTHAN**				
	HYDRO				
(a)	Mahi Bajaj Sagar	2x25+2x45	140.00	2x25+2x45	140.00
(b)	Rana Pratap Sagar (RPS)	4x43	172.00	4x43	172.00
(c)	Jawahar Sagar (JS)	3x33	99.00	3x33	99.00
(d)	Anoopgarh	6x1.5	9.00	6x1.5	9.00
(e)	Small Hydro		14.32		14.32

	Total Hydro		434.32		434.32
	THERMAL				
(f)	Kota TPS	2x110+3x210	850.00	2x110+3x210	850.00
(g)	Suratgarh TPS	4x250	1000.00	4x250	1000.00
(g)	Ramgarh GT	1x3	3.00	1x3	3.00
(i)	Ramgarh GT EXT.	1x35.5	35.50	1x35.5	35.50
	Total Thermal		1888.50		1888.50
(J)	Wind farm	2+2	4.00	2+2	4.00
	Total Rajasthan		**2326.82**		**2326.82**
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)	Khatima	3x13.8	41.40	3x13.8	41.40
(e)	Ramganga	3x66.0	198.00	3x66.0	198.00
(f)	Ganga Canal				
	Bhola	4x.375+2x.6+		4x.375+2x.6+	
	Salara	2x1.5+		2x1.5+	
	Chitwa	2x1.5+		2x1.5+	
	Nirgazni	2x2.5+		2x2.5+	
	Mohamedpur	3x3.1+		3x3.1+	
	Pathri	3x6.8	43.40	3x6.8	43.40
(g)	Yamuna (I & IV)				
	- Dhalipur	3x17.00+		3x17.00+	
	- Dhakrani	3x11.25+		3x11.25+	
	- Kulhal	3x10.00	114.75	3x10.00	114.75
(h)	Chibro	4x60.0	240.00	4x60.0	240.00
(i)	Khodri	4x30.0	120.00	4x30.0	120.00

(j)	Chilla	4x36.0	144.00	4x36.0	144.00
(k)	Maneri Bhali	3x30.0	90.00	3x30.0	90.00
(l)	Khara	3x24.0	72.00	3x24.0	72.00
(m)	Sobla & small hydro	6 +12.2	18.20	6 +12.2	18.20
	Total Hydro		1510.75		1510.75
	THERMAL				
(m)	Obra	5x50	250.00	4x40	160.00
(n)	Obra Extn. - I	3x100	300.00	3x94	282.00
(o)	Obra Extn. - II	5x200	1000.00	5x200	1000.00
(p)	Panki	1x32	32.00	1x32	32.00
(q)	Panki Extn.	2x110	220.00	2x105	210.00
(r)	Harduaganj - A	3x30	90.00	0	0.00
(s)	Harduaganj - B	2x50+2x60	220.00	1x40+2x55	150.00
(t)	Harduaganj - C	2x60+1x110	230.00	2x60+1x105	225.00
(u)	Paricha	2x110	220.00	2x110	220.00
(v)	Anpara - A	3x210	630.00	3x210	630.00
(w)	Anpara - B	2x500	1000.00	2x500	1000.00
	Total Thermal		4192.00		3909.00
	Total UP		**5702.75**		**5419.75**
	Total Region (1 to 9)		**28317.49**		**27804.63**

2. SUMMARY OF THE EFFECTIVE GENERATING CAPACITY(MW) IN THE NORTHERN REGION AT THE END OF MARCH 2002

Agency / Source	Hydro	Thermal	Gas/Diesel/Wind	Nuclear	Total	% of Total
NTPC	---	5825.00	2344.04	---	8169.04	29.38%
NHPC	1984.20	---	---	---	1984.20	7.14%
NPC	---	---	---	1180.00	1180.00	4.24%
BBMB	2852.15	---	---	---	2852.15	10.26%
CHANDIGARH	---	---	1.40	---	1.40	0.01%
DELHI	---	396.50	282.00	---	678.50	2.44%
HARYANA	48.00	1025.00	25.20	---	1098.20	3.95%
HIMACHAL	411.97	---	0.13	---	412.10	1.48%
J&K	225.19	---	182.18	---	407.37	1.47%
PUNJAB	1145.10	2130.00	---	---	3275.10	11.78%
RAJASTHAN	434.32	1850.00	42.50	---	2326.82	8.37%
UP	1510.75	3909.00	---	---	5419.75	19.49%
Total	8611.68	15135.50	2877.45	1180.00	27804.63	100.00%
% of TOTAL	30.97%	54.44%	10.35%	4.24%	100.00%	

Notes The above table doesn't take into account the shares of a state in power stations located in the neighbouring state. Details of this is as under :

(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 UPSEB viz. 111.20 MW. It also has a 20 % share in the Kulhal and Khara hydro power houses viz. 20.40 MW. However, these shares are subject to actual physical drawals over designated transmission lines.

(iii) HP has a fixed energy share every month in the Shanan power house of PSEB.

(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

PROJECTS	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 these 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 viz. 125 MW in the first five units of Satpura TPS.

If the above shares of Rajasthan are included, the regional effective generating capacity would be 27851.63 MW.

3. BREAKUP OF EFFECTIVE HYDRO CAPACITY (MW) IN NORTHERN REGION AS ON 31.03.2002

Agency / Source	Run-of -the -river	Reservoir	Total
NHPC	1444.20	540.00	1984.20
BBMB	1155.15	1697.00	2852.15
DELHI	0.00	0.00	0.00
HARYANA	48.00	0.00	48.00

HP	411.97	0.00	411.97
J&K	225.19	0.00	225.19
PUNJAB	545.10	600.00	1145.10
RAJASTHAN	262.32	172.00	434.32
UP	1012.75	498.00	1510.75
Total	5104.68	3507.00	8611.68

4. Generation Addition/ Deletion During The Month

Suratgarh #4 (250 MW) of RRVPNL synchronised on 25.03.2002 at 19:10 hrs.

II. SALIENT FEATURES OF SYSTEM CONDITIONS

1. Effective Generation Capacity at the end of month

Constituent	Effective Capacity		Increase	
	March 2002	**March 2001**	MW	%
Chandigarh	1.40	1.40	0.00	0.00
Delhi	678.50	678.50	0.00	0.00
Haryana	1098.20	888.20	210.00	23.64
H.P.	412.10	303.60	108.50	35.74
J & K	407.37	407.37	0.00	0.00
Punjab	3275.10	2975.10	300.00	10.08
Rajasthan	2326.82	1826.82	500.00	27.37
U.P.	5419.75	5419.75	0.00	0.00
NTPC	8169.04	8169.04	0.00	0.00
NHPC	1984.20	1984.20	0.00	0.00
NPC	1180.00	960.00	220.00	22.92
BBMB	2852.15	2821.15	31.00	1.10
Total	27804.63	26435.13	1369.50	5.18

2. Power Supply Position

State/UT	March 2002			March 2001			Percentage increase over 2000	
	Energy(MU/day)			Energy(MU/day)				
	Demand met	Reqt.	%Shortage	Demand met	Reqt.	%Shortage	Demand met	Reqt.
Chandigarh	2.46	2.46	0.00	2.22	2.22	0.00	10.81	10.81
Delhi	44.58	45.19	1.35	40.87	42.12	2.97	9.08	7.29
Haryana	46.39	46.43	0.09	43.20	44.53	2.99	7.38	4.27
HP	8.85	8.85	0.00	8.07	8.78	8.09	9.67	0.80
J&K	17.84	19.60	8.98	14.28	18.47	22.69	24.93	6.12
Punjab	65.88	66.44	0.84	60.12	65.70	8.49	9.58	1.13
Rajasthan	71.60	72.45	1.17	70.45	71.72	1.77	1.63	1.02
UP	121.85	135.86	10.31	114.80	129.24	11.17	6.14	5.12
NFF/Rail	1.35	1.35	0.00	0.78	0.78	0.00	73.08	73.08
REGION	380.80	398.63	4.47	354.79	383.56	7.50	7.33	3.93

Frequency Regime	March 2002	March 2001
Average (Hz)	50.22	49.45
Above 50.5 Hz (%)	32.04	5.66
Above 50.2 Hz (%)	56.95	12.13
Below 49.5 Hz (%)	5.72	58.70
Below 49.0 Hz (%)	0.69	20.43
Below 48.5 Hz (%)	0.07	2.73

3. Peak Power Supply Position

State/UT	March 2002			March 2001			Percentage increase over 2000	
	Peak (MW)			Peak (MW)				
	Demand met	Reqt.	%Shortage	Demand met	Reqt.	%Shortage	Demand met	Reqt.
Chandigarh	151	151	0.00	121	121	0.00	24.79	24.79
Delhi	2575	2605	1.15	2256	2516	10.33	14.14	3.54
Haryana	2655	2655	0.00	2341	2427	3.54	13.41	9.39
HP	520	520	0.00	486	515	5.63	7.00	0.97
J&K	946	1149	17.67	808	1115	27.53	17.08	3.05
Punjab	3661	3908	6.32	3486	3523	1.05	5.02	10.93
Rajasthan	3657	3657	0.00	3631	3631	0.00	0.72	0.72

UP	6399	6977	8.28	5870	6714	12.57	9.01	3.92
NFF/Rail	66	66	0.00	52	52	0.00	26.92	26.92
REGION	19937	21481	7.19	17844	19970	10.65	11.73	7.57

III. FREQUENCY PROFILE DURING MARCH 2002

DATE	Average	MAX.		MIN.		Std dev	Frequency
	Hz	Hz	Time	Hz	Time	Hz	Var. Index(FVI)
1	50.23	51.16	0.05	49.04	10.11	0.42	2.24
2	50.37	51.20	13.25	48.92	19.08	0.44	3.28
3	50.26	51.12	3.44	48.72	5.40	0.49	3.04
4	50.23	51.20	18.01	48.40	6.24	0.40	2.15
5	50.28	51.08	17.05	48.24	19.29	0.36	2.09
6	50.24	51.16	17.30	49.12	5.55	0.35	1.84
7	50.30	51.16	21.32	49.04	5.45	0.36	2.20
8	50.26	51.20	17.35	48.28	22.43	0.42	2.43
9	50.29	51.20	22.53	48.72	19.10	0.44	2.77
10	50.34	51.20	5.05	48.44	19.38	0.44	3.09
11	50.32	51.32	16.19	49.00	6.18	0.46	3.12
12	50.13	51.28	18.02	48.76	9.11	0.37	1.55
13	50.23	51.24	8.09	48.84	19.46	0.37	1.88
14	50.35	51.16	5.01	49.12	6.00	0.34	2.39
15	50.24	51.16	18.07	49.00	22.13	0.35	1.53
16	50.16	51.16	18.07	48.88	16.06	0.39	1.74
17	50.26	51.20	16.06	49.20	19.08	0.33	1.73
18	50.12	51.16	6.59	48.96	20.53	0.20	1.40
19	50.08	51.28	18.01	49.04	5.42	0.43	1.87
20	49.91	51.08	8.50	48.40	16.35	0.50	2.57
21	50.10	51.28	8.37	48.84	4.51	0.45	2.10
22	50.15	51.28	18.03	48.92	23.32	0.43	2.07
23	50.06	51.36	18.09	49.00	0.15	0.49	2.41

24	50.37	51.24	14.34	49.08	0.20	0.43	3.17
25	50.42	51.20	11.43	49.28	20.23	0.36	3.09
26	50.19	51.20	8.08	48.92	4.35	0.43	2.16
27	50.02	51.12	18.04	49.20	4.46	0.34	1.19
28	50.17	51.16	17.58	48.88	22.10	0.47	2.49
29	50.28	51.28	8.38	48.72	19.07	0.49	3.22
30	50.33	51.36	18.01	48.96	19.19	0.39	2.64
31	50.27	51.36	18.03	49.36	19.39	0.33	1.83
Monthly	**50.22**	**51.36**		**48.24**		**0.42**	**2.30**

Note : $$\mathrm{FVI} = \frac{10\sum (F-50)^2}{24 \times 60 \times 6}$$ where F = frequency measured at 10 second interval

IV. VOLTAGE PROFILE DURING MARCH 2002

Date	Kanpur (400 KV)		Dadri (400 KV)		Jaipur (400 KV)		Moga (400 KV)		B.T.P.S.(220 KV)	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	406	380	412	382	422	392	416	387	216	198
2	413	384	420	382	425	394	413	386	216	200
3	415	384	424	392	425	398	411	390	219	202
4	413	384	422	384	422	392	416	385	219	200
5	410	380	416	382	418	389	412	385	218	198
6	411	386	414	382	418	392	408	384	215	202
7	413	386	416	384	422	389	409	384	218	201
8	415	386	416	380	420	392	410	384	216	202
9	413	386	416	384	420	392	413	388	216	202
10	413	382	422	386	422	389	416	385	218	202
11	415	384	418	386	422	396	417	387	216	203
12	413	397	416	388	422	396	407	386	215	202
13	413	393	414	386	420	387	408	384	214	201
14	413	391	410	382	422	392	406	387	213	201
15	413	384	416	382	425	392	408	384	212	197
16	415	391	416	380	422	374	407	373	213	197
17	413	399	416	392	425	398	410	385	214	200

18	410	391	406	398	420	392	407	385	214	200
19	411	395	406	400	418	389	407	386	213	197
20	413	389	412	390	418	394	410	388	213	197
21	411	389	416	386	422	392	412	389	215	197
22	410	389	416	386	418	387	412	385	216	191
23	415	395	416	388	422	389	412	378	213	196
24	411	397	418	398	425	398	411	390	215	201
25	415	391	422	386	422	389	412	383	215	195
26	413	395	412	384	420	387	408	384	213	195
27	410	389	412	390	420	392	408	389	213	197
28	411	395	416	386	427	396	409	388	215	197
28	415	395	420	394	427	398	410	387	215	198
28	413	399	420	390	429	396	415	389	215	195
28	413	397	416	392	431	400	412	392	216	200
Month	**415**	**380**	**424**	**380**	**431**	**374**	**417**	**373**	**219**	**191**

V. PERFORMANCE OF GENERATING STATIONS DURING MARCH 2002

S.No.	Power Station	Effective Capacity MW	Energy Generated		Cumulative from 01.04.2001	
			Gross MU	Ex Bus MU	Gross MU	Ex-bus MU
1	**CENTRAL SECTOR**					
A	**NTPC (Thermal)**					
(a)	Badarpur TPS	705.00	362.86	329.94	5277.41	4804.19
(b)	Singrauli STPS	2000.00	1366.63	1278.40	15480.93	14454.46
(c)	Rihand STPS	1000.00	698.96	641.75	7659.77	7072.21
(d)	Dadri NCTPS	840.00	547.97	505.92	6680.70	6147.77
(e)	Unchahar-I TPS	420.00	281.16	258.57	3208.89	2928.24
(f)	Unchahar-II TPS	420.00	280.79	258.20	3367.61	3069.22
(g)	Tanda TPS	440.00	254.22	222.44	2108.31	1844.84
(h)	Anta GPS	419.33	271.40	265.06	3059.82	2997.65
(i)	Auraiya GPS	663.36	372.22	366.31	4679.11	4609.99
(j)	Dadri GPS	829.78	488.71	476.31	5728.39	5581.50
(k)	Faridabad GPS	431.57	231.50	225.52	2866.56	2793.52
	Total NTPC	**8169.04**	**5156.41**	**4828.41**	**60117.48**	**56303.59**

B	**NHPC**					
(a)	Bairasiul	180.00	67.83	67.83	595.03	576.81
(b)	Salal	690.00	163.42	162.88	2932.31	2907.80
(c)	Tanakpur HPS	94.20	20.40	20.31	414.76	410.18
(d)	Chamera HPS	540.00	126.25	125.89	1954.72	1948.55
(e)	Uri HPS	480.00	304.68	299.79	2100.23	2073.01
	Total NHPC	**1984.20**	682.59	676.70	**7997.06**	**7916.35**
C	**NPC**					
(a)	RAPS -A	300.00	215.58	196.75	1627.41	1489.95
(b)	RAPS -B	440.00	325.87	294.54	3040.13	2753.17
(c)	NAPS	440.00	330.97	299.98	3332.05	3008.23
	Total NPC	**1180.00**	**872.42**	**791.27**	**7999.59**	**7251.34**
2	**JOINTLY OWNED (BBMB)**					
(a)	Bhakra Complex	1465.15	433.13	430.85	5458.28	5431.89
(b)	Dehar	990.00	211.95	211.95	2949.44	2943.50
(c)	Pong	366.00	90.11	90.11	1353.79	1349.83
	Total BBMB	**2821.15**	**735.19**	**732.91**	**9761.51**	**9725.22**
3	**DELHI**					
(a)	Indra Prastha	247.50	54.17	47.67	812.75	715.22
(b)	Rajghat	149.00	83.71	74.50	706.08	628.41
(c)	Gas Turbines	282.00	73.83	71.61	1160.84	1126.02
	Total DELHI	**678.50**	**211.71**	**193.78**	**2679.67**	**2469.64**
4	**HARYANA**					
(a)	WYC	48.00	24.32	24.08	229.16	226.87
(b)	Faridabad (New)	165.00	87.67	75.83	807.50	698.48
(c)	Panipat	860.00	427.67	376.35	4269.08	3756.79
(d)	Magnum Diesel(IPP)	25.20	7.69	7.61	102.80	101.87
	Total Haryana	**1098.20**	**547.35**	**483.87**	**5408.53**	**4784.01**

5	**HP**					
(a)	Giri	60.00	22.12	21.90	200.93	199.80
(b)	Bassi	60.00	18.98	18.79	258.58	257.50
(c)	Binwa	6.00	3.39	3.36	20.53	20.39
(d)	Rongtong (+Nogli+Micro+Thirot+Sal-2)	15.02	1.76	1.74	24.63	24.34
(e)	Andhra	16.95	5.40	5.34	60.28	59.98
(f)	Bhabha (H)	120.00	18.48	18.29	466.30	464.98
(g)	Baner (H)	12.00	2.68	2.66	30.77	30.64
(h)	Gaj (H)	10.50	2.83	2.80	38.86	38.63
(i)	Gumma	3.00	0.80	0.79	8.31	8.23
(j)	Ghanvi	22.50	6.04	5.98	41.34	41.12
(k)	Malana (IPP)	86.00	82.47	81.65	148.84	148.84
	Total HP	**411.97**	**164.94**	**163.29**	**1299.37**	**1294.45**
6	**J & K**					
(a)	Lower Jhelum	105.00	32.84	32.51	322.80	319.57
(b)	Upper Sindh	57.60	11.78	11.67	165.21	163.55
(c)	Ganderbal	15.00	2.28	2.26	28.67	28.38
(d)	Mohra	9.00	0.00	0.00	0.00	0.00
(e)	Chenani	25.30	2.81	2.78	61.31	60.70
(f)	Stakna	9.75	0.00	0.00	0.00	0.00
(g)	Small Hydel }	3.54	0.00	0.00	0.00	0.00
(h)	Pampore GT St - I }	75.00	0.00	0.00	0.00	0.00
	Pampore GT St - II	100.00				
	Total J & K	**400.19**	**49.71**	**49.21**	**577.98**	**572.20**
7	**PUNJAB**					
(a)	Jogindernagar/ Shanan	110.00	35.07	35.04	473.11	471.48
(b)	UBDC	90.00	0.00	0.00	320.49	318.75
(c)	Mukerian	207.00	104.14	103.74	1166.58	1162.40
(d)	Anandpur Sahib (APS)	134.00	48.27	48.20	510.12	508.26
(e)	Ranjit Sagar HPS	600.00	81.75	81.59	1413.36	1409.99
(f)	Small Hydel	4.10	0.87	0.86	9.47	9.39
(g)	GNDTPS (Bhatinda)	440.00	241.19	220.12	2763.57	2501.75

(h)	GGSTPS (Ropar)	1260.00	690.93	632.60	8853.06	8130.42
(i)	Jhalkeri Rice Straw	10.00	0.00	0.00	0.00	0.00
	Fired		0.00	0.00		
(j)	Lehra Mohabbat TPS	420.00	155.51	139.98	3074.55	2790.57
	Total Punjab	**3275.10**	**1357.74**	**1262.14**	**18584.30**	**17303.03**
8	**RAJASTHAN**					
(a)	Mahi Bajaj Sagar	140.00	2.63	2.63	68.46	68.46
(b)	Rana Pratap Sagar (RPS)	172.00	0.05	0.01	259.42	258.97
(c)	Jawahar Sagar (JS)	99.00	0.50	0.49	198.92	198.38
(d)	Anoopgarh	9.00	1.12	1.12	3.97	3.97
(e)	Small Hydro	14.32	0.38	0.38	8.88	8.88
(f)	Kota TPS }	850.00	570.89	514.62	6347.16	5735.09
(g)	RAMGARH GT }	3.00	0.00	0.00		
(h)	RAMGARH GT EXT	35.50	0.00	0.00	119.09	119.09
(I)	Suratgarh TPS	750.00	405.74	367.17	4226.73	3832.71
(j)	Wind Farm	4.00	1.24	1.24	7.70	7.70
	Total Rajasthan	**2076.82**	**982.54**	**887.66**	**11240.33**	**10233.24**
9	**U.P.**					
	HYDRO					
(a)	Rihand	300.00	91.13	90.22	1038.93	1028.54
(b)	Obra	99.00	35.91	35.55	402.91	398.88
(c)	Matatilla	30.00	12.11	11.99	143.98	142.54
(d)	Khatima	41.40	5.98	5.92	171.93	170.21
(e)	Ramganga	198.00	35.69	35.33	273.28	270.54
(f)	Ganga Canal	43.40	13.31	13.18	160.05	158.45
(g)	Yamuna (I & IV)	114.75	14.72	14.57	433.76	429.42
(h)	Chibro	240.00	73.29	72.55	742.70	735.28
(i)	Khodri	120.00	37.38	37.00	358.98	355.39
(j)	Chilla	144.00	33.19	32.86	559.54	553.94
(k)	Maneri Bhali	90.00	36.29	35.92	372.74	369.01
(l)	Khara	72.00	10.53	10.42	309.87	306.77

	Total U.P. (Hydro)	**1492.55**	**399.51**	**395.52**	**4968.67**	**4918.98**
	THERMAL					
(m)	Obra	160.00	49.69	43.48	303.90	265.91
(n)	Obra Extn. - I	282.00	60.81	53.21	620.85	543.25
(o)	Obra Extn. - II }	1000.00	427.15	373.75	4759.69	4164.73
(p)	Panki	32.00	0.00	0.00		
(q)	Panki Extn.	210.00	51.53	45.09	946.85	828.49
(r)	Harduaganj - A }	0.00	0.00	0.00		
(s)	Harduaganj - B	150.00	0.00	0.00		
(t)	Harduaganj - C	225.00	88.49	77.43	681.19	596.04
(u)	Paricha	220.00	97.45	85.27	1026.96	898.59
(v)	Anpara - A	630.00	374.09	327.33	4387.35	3838.93
(w)	Anpara - B	1000.00	603.40	527.98	7729.98	6763.73
	Total U.P. (Thermal)	**3909.00**	**1752.61**	**1533.53**	**20456.77**	**17899.67**
	Total U.P.	**5401.55**	**2152.12**	**1929.05**	**25425.44**	**22818.65**
	Total Region	**27496.72**	**12912.71**	**11998.30**	**151091.25**	**140671.73**

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% Nuclear stations-----12.5%

------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%

2. The generation on small hydro& Sobla in U.P. and on small diesel gen. Sets in UT Chandigarh, H.P.and J&K has been neglected.

VI. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING MARCH 2002

(All figs. in

Sl. No.	State/UT/ System	Singrauli STPS		Rihand STPS		BTPS	W. Grid	VSTPS (WR)
		Entitlement	Actual	Entitlement	Actual	Actual	Actual	Actual
1	Chandigarh	3.59	3.59	6.61	5.47	0.00	0.02	0.00
2	Delhi	99.25	99.41	70.68	71.50	329.94	0.27	0.00
3	Haryana	155.36	155.50	67.61	68.35	0.00	0.25	0.00
4	H.P.	19.07	19.13	30.71	28.91	0.00	0.10	0.00
5	J & K	32.24	32.44	64.21	65.25	0.00	0.35	0.00
6	Punjab	116.29	116.51	69.10	70.25	0.00	0.38	0.00
7	Rajasthan	218.06	218.23	86.74	87.65	0.00	0.30	0.00
8	U.P.	505.22	504.26	223.57	221.86	0.00	0.83	0.00
9	MP	0.00	0.00	0.00	0.00	0.00	4.91	0.00
10	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Bihar	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Trans. Losses	41.95	41.95	22.52	22.51	0.00	0.00	0.00
	TOTAL	**1191.03**	**1191.03**	**641.75**	**641.75**	**329.94**	**7.38**	**0.00**

Note :- Singrauli sentout excludes 87.39 MU supplied to Western Grid

Sl. No.	State/UT/ System	Dadri NCTPS		Unchahar-I TPS		Unchahar-II TPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	0.00	0.00	1.38	0.12	2.60	0.00
2	Delhi	362.53	323.37	16.85	17.45	37.86	24.07
3	Haryana	0.95	0.94	10.59	11.14	19.42	22.03
4	H.P.	0.00	0.00	2.39	1.76	2.08	1.01
5	J & K	0.00	0.00	12.32	13.08	31.84	39.41
6	Punjab	0.00	0.00	20.59	20.49	35.43	8.49
7	Rajasthan	92.46	91.56	16.46	17.13	37.45	62.80
8	U.P.	49.99	85.20	168.92	168.32	82.46	91.33

9	MP	0.00	4.79	0.00	0.00	0.00	0.00
10	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00
11	Bihar	0.00	0.06	0.00	0.00	0.00	0.00
12	Trans. Losses	0.00	0.00	9.08	9.08	9.06	9.06
	Total	**505.93**	**505.93**	**258.58**	**258.58**	**258.20**	**258.20**

Sl. No.	State/UT/ System	Anta GPS		Auraiya GPS		Uri HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	3.67	2.10	3.74	0.96	1.89	1.83
2	Delhi	31.58	31.93	48.00	47.75	32.66	32.86
3	Haryana	24.51	24.84	35.46	35.41	16.23	16.42
4	H.P.	9.12	8.74	11.49	10.12	8.08	8.15
5	J & K	27.23	27.69	39.03	39.10	100.91	101.17
6	Punjab	32.03	32.53	47.43	47.45	40.85	41.14
7	Rajasthan	65.97	66.37	53.19	52.93	26.42	26.64
8	U.P.	60.34	60.26	115.06	113.67	69.76	68.59
9	MP	0.00	0.00	0.00	6.04	0.00	0.00
10	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00
11	Bihar	0.00	0.00	0.00	0.07	0.00	0.00
12	Trans. Losses	10.60	10.60	12.81	12.72	3.00	3.00
	TOTAL	**265.05**	**265.05**	**366.21**	**366.21**	**299.80**	**299.80**

Sl. No.	State/UT/ System	Dadri GPS		Bairasiul HPS		Salal HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	3.29	0.03	0.00	0.00	0.43	0.43
2	Delhi	57.91	64.43	7.16	7.16	18.52	18.52
3	Haryana	24.30	29.99	19.87	19.87	23.94	23.94
4	H.P.	4.94	3.89	7.82	7.82	1.58	1.58
5	J & K	41.56	49.30	0.00	0.00	56.68	56.68
6	Punjab	72.39	71.24	30.28	30.28	42.40	42.40
7	Rajasthan	54.41	61.66	0.00	0.00	4.70	4.70
8	U.P.	144.07	161.80	0.00	0.00	13.00	13.00

9	MP	0.00	0.00	0.00	0.00	0.00	0.00
10	Railways	73.44	33.97	0.00	0.00	0.00	0.00
11	Bihar	0.00	0.00	0.00	0.00	0.00	0.00
12	Trans. Losses	0.00	0.00	2.71	2.71	1.63	1.63
	Total	**476.31**	**476.31**	**67.84**	**67.84**	**162.88**	**162.88**

Sl. No.	State/UT/ System	Tanakpur HPS		Chamera HPS		RAPS -A	RAPS -B		Tanda TPS
		Entitlement	Actual	Entitlement	Actual	Actual	Entitlement	Actual	Actual
1	Chandigarh	0.19	0.19	4.84	4.52	0.00	0.00	0.00	0.00
2	Delhi	1.87	1.87	9.57	9.81	0.00	34.73	14.57	0.00
3	Haryana	0.93	0.93	19.15	19.37	0.00	0.00	28.38	0.00
4	H.P.	0.56	0.56	19.01	19.10	0.00	0.00	0.59	0.00
5	J & K	1.12	1.12	4.74	5.04	0.00	78.91	16.18	0.00
6	Punjab	2.62	2.62	12.39	12.72	0.00	0.00	0.95	0.00
7	Rajasthan	1.68	1.68	24.08	24.34	196.75	180.91	203.17	0.00
8	U.P.	5.63	5.63	28.98	27.86	0.00	0.00	30.70	222.44
9	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Trans. Losses	0.53	0.53	3.14	3.14	0.00	0.00	0.00	0.00
11	0thers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**15.13**	**15.13**	**125.90**	**125.90**	**196.75**	**294.54**	**294.54**	**222.44**

Note :- Tanakpur sentout excludes 5.171 MU supplied to Nepal

Sl. No.	State/UT/ System	Narora APS		Bhakra HPS		Dehar HPS	Pong	F'bad GPS	ER import
		Entitlement	Actual	Entitlement	Actual	Actual	Actual	Actual	Actual
1	Chandigarh	3.94	0.11	44.18	44.09	0.00	0.00	0.00	12.84
2	Delhi	35.01	25.94	0.00	0.00	0.00	0.00	0.00	31.22
3	Haryana	27.61	30.85	113.76	114.86	62.37	14.23	225.52	35.54
4	H.P.	13.84	5.18	10.92	10.99	8.56	0.00	0.00	12.84
5	J & K	29.52	37.96	0.00	0.00	0.00	0.00	0.00	12.84
6	Punjab	33.61	23.32	156.96	158.48	93.56	21.35	0.00	0.00
7	Rajasthan	39.59	51.76	67.20	67.71	38.98	50.15	0.00	12.84
8	U.P.	106.31	114.31	0.00	0.00	0.00	0.00	0.00	53.74
9	N.F.F.	0.00	0.00	14.88	11.77	0.00	0.00	0.00	0.00
10	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Trans. Losses	10.55	10.55	22.95	22.95	8.48	4.38	0.00	0.00
	Total	**299.98**	**299.98**	**430.85**	**430.85**	**211.95**	**90.11**	**225.52**	**171.84**

Note : - The above figures are based on the daily energy accounts prepared by NRLDC.

VII. BILATERAL EXCHANGES IN THE NORTHERN REGION DURING MARCH 2002

(All figs in MU'S)

FROM / TO	Chandigarh	Delhi	Haryana	Himachal	J & K	Punjab	Rajasthan	UP	MP	Bihar	Others	Total
Chandigarh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
Delhi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.78	**4.783**
Haryana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
Himachal	0.00	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	0.00	**1.620**
J & K	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	**6.000**
Punjab	0.00	0.00	0.00	-1.62	-6.00	0.00	0.00	0.00	0.00	0.00	0.00	**-7.200**
Rajasthan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
UP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
MP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
Bihar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.000**
Others	0.00	-4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**-4.783**
Total	**0.000**	**-4.783**	**0.000**	**-1.620**	**-6.000**	**7.200**	**0.000**	**0.000**	**0.000**	**0.000**	**4.783**	**0.000**

The above figures do not indicate the following shares in common projects/ bilateral agreements:

i) Harayana's share in IP station of Delhi **12.279** MU
ii) Himachal's share in Shanan & RSD power station of Punjab **8.450** MU
iii) Himachal's share in Yamuna hydro power complex of UP **32.381** MU
iv) Maruti to Harayana **4.373** MU

Note: The above figures are based on the daily energy accounts prepared by NRLDC.

VIII. PROGRESS OF INSTALLATION OF SHUNT CAPACITORS IN NORTHERN REGION
AS ON 31.03.2002

(ALL FIGS IN MVAR)

CONSTITUENT	REQUIREMENT AT THE END OF 2001-2002	CAPACITORS AS ON 31.03.2002	CAPACITORS ADDITION DURING		ADDITIONAL REQUIRED DURING 2001-2002
		INSTALLED	2000-2001	April 01 - March 02	
Chandigarh	127	100	60	7	27
Delhi	2734	2633	201	397	101
Haryana	3080	2059	368	416	1021
H.P.	335	193	46	57	142
J & K	880	159	0	12	721
Punjab	4950	4630	384	199	320
Rajasthan	3300	2416	176	59	884
U.P.	5654	4691	279	485	963
BBMB	381	381	0	0	0
TOTAL	21441	17262	1514	1632	4179

SOURCE: Minutes of 327th OCC meeting of NREB held on 18th April, 2002.

IX. HYDRAULIC DATA FOR RESERVOIRS DURING MARCH 2002

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 (m) March 2002 (ft)	458.86 1505.44	394.77 1295.19	259.48 851.30	345.40 1133.21	380.35 1247.86
Level on last day of (m) March 2001 (ft)	457.54 1501.11	394.92 1295.67	258.81 849.10	344.60 1130.59	380.60 1248.69
Live Capacity as on (mhmt) last day of March 2002(maft)	0.08 0.62	0.11 0.86	0.22 1.80	0.03 0.27	0.00 0.00
Live Capacity as on (mhmt) last day of March 2001(maft)	0.07 0.58	0.11 0.90	0.18 1.43	0.02 0.16	0.00 0.00
Energy content as on last day of March 2002 (MU)	250.00	130.00	350.00	60.00	0.00
Energy content as on last day of March 2001 (MU)	240.00	140.00	325.00	35.00	0.00
Maximum level (m)	469.35	398.37	261.21	345.52	298.00

	(ft)	1539.87	1307.00	857.00	1133.58	977.70
	(date)	01.03.2002	01.03.2002	01.03.2002	14.03.2002	01.03.2002
Minimum level	(m)	458.86	394.77	259.48	345.40	297.55
	(ft)	1505.44	1295.19	851.30	1133.21	976.20
	(date)	31.03.2002	31.03.2002	31.03.2002	31.03.2002	24.03.2002

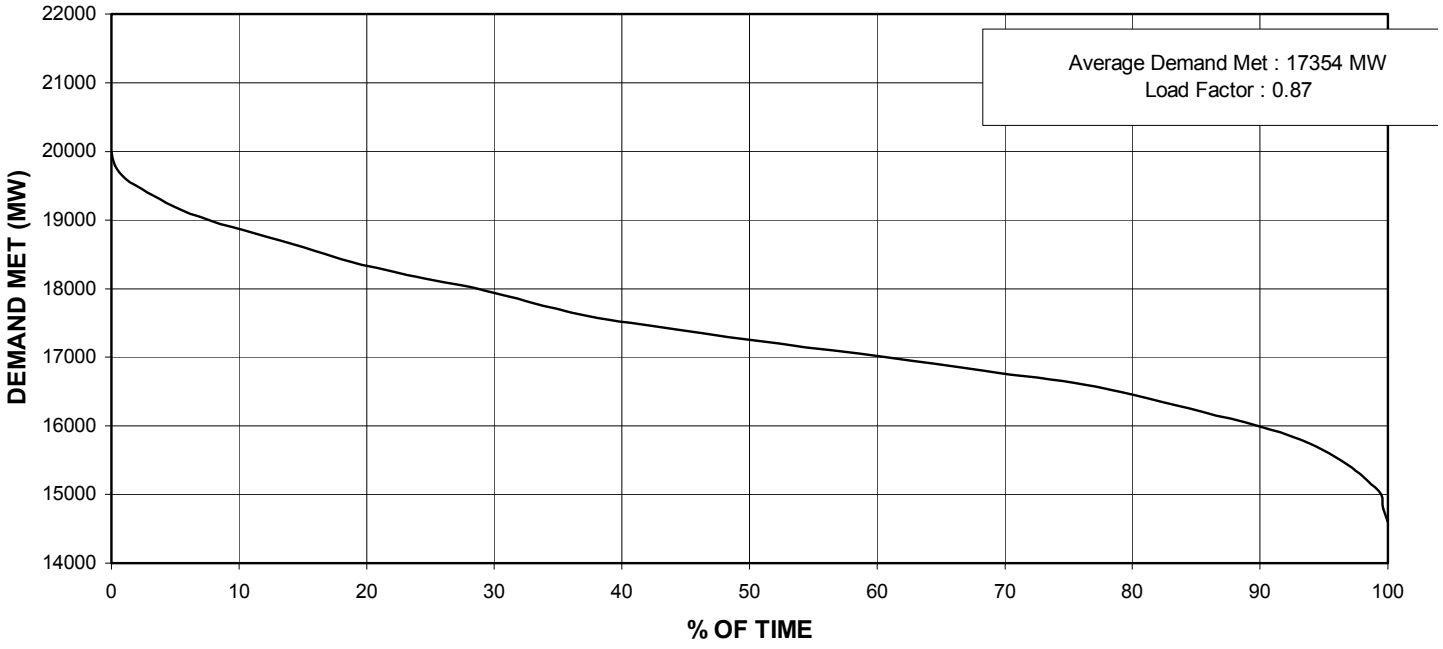
Energy content of Bhakra : Total Energy content at Bhakra, Ganguwal and Kotla power stations

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

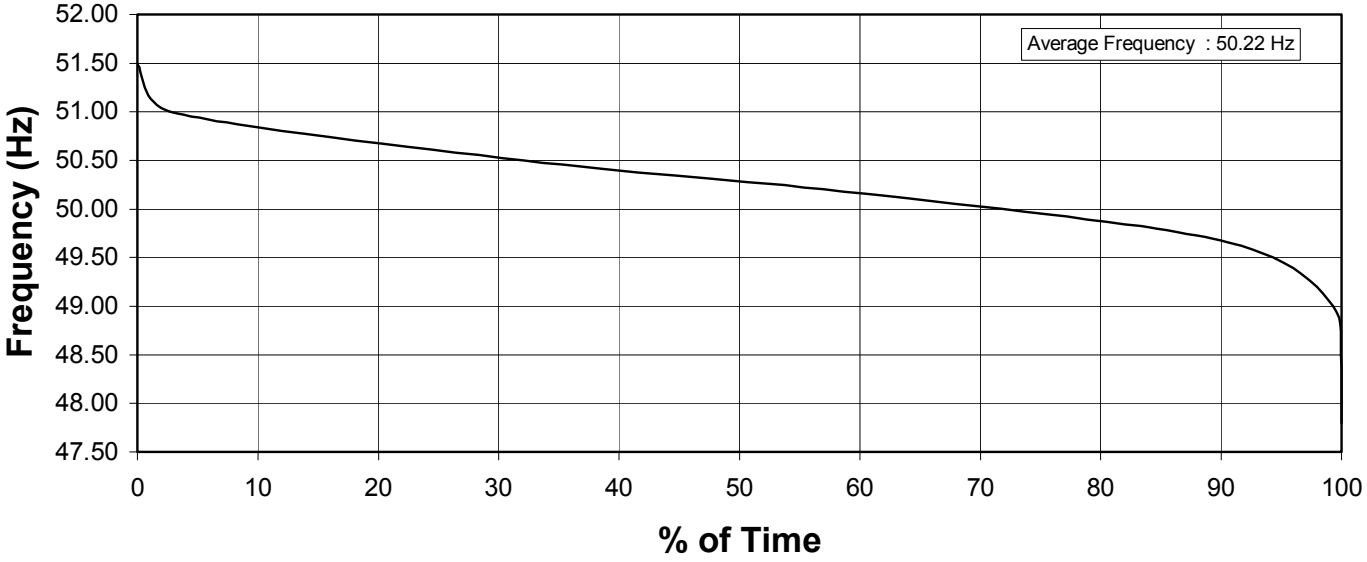
Energy content of RPS : Total Energy content of Rana Pratap Sagar and Jawahar Sagar Power Stations.

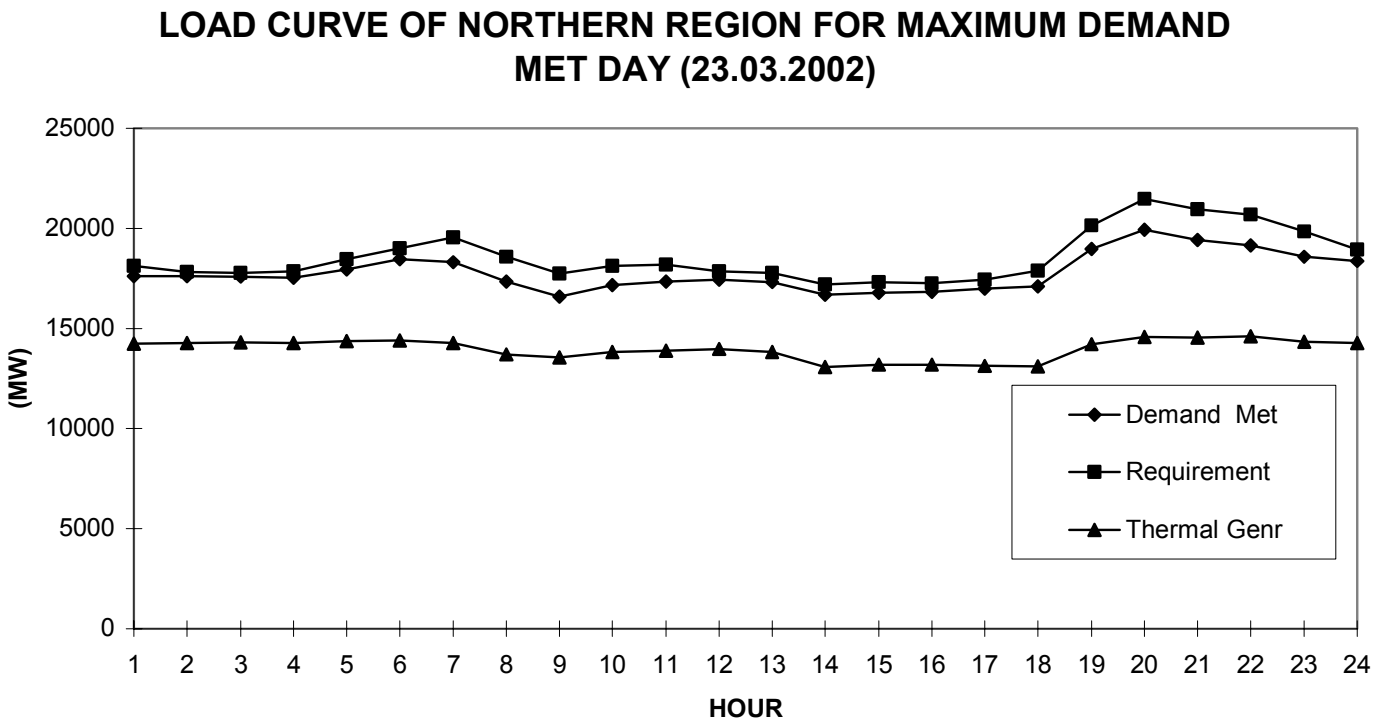
Energy Content of G. Sagar : Total Energy content at Gandhi Sagar, RP Sagar and Jawahar Sagar Power Stations.

LOAD DURATION CURVE OF NORTHERN REGION FOR MARCH 2002



FREQUENCY DURATION CURVE OF NORTHERN REGION FOR MARCH 2002

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15000
10000
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(MW)
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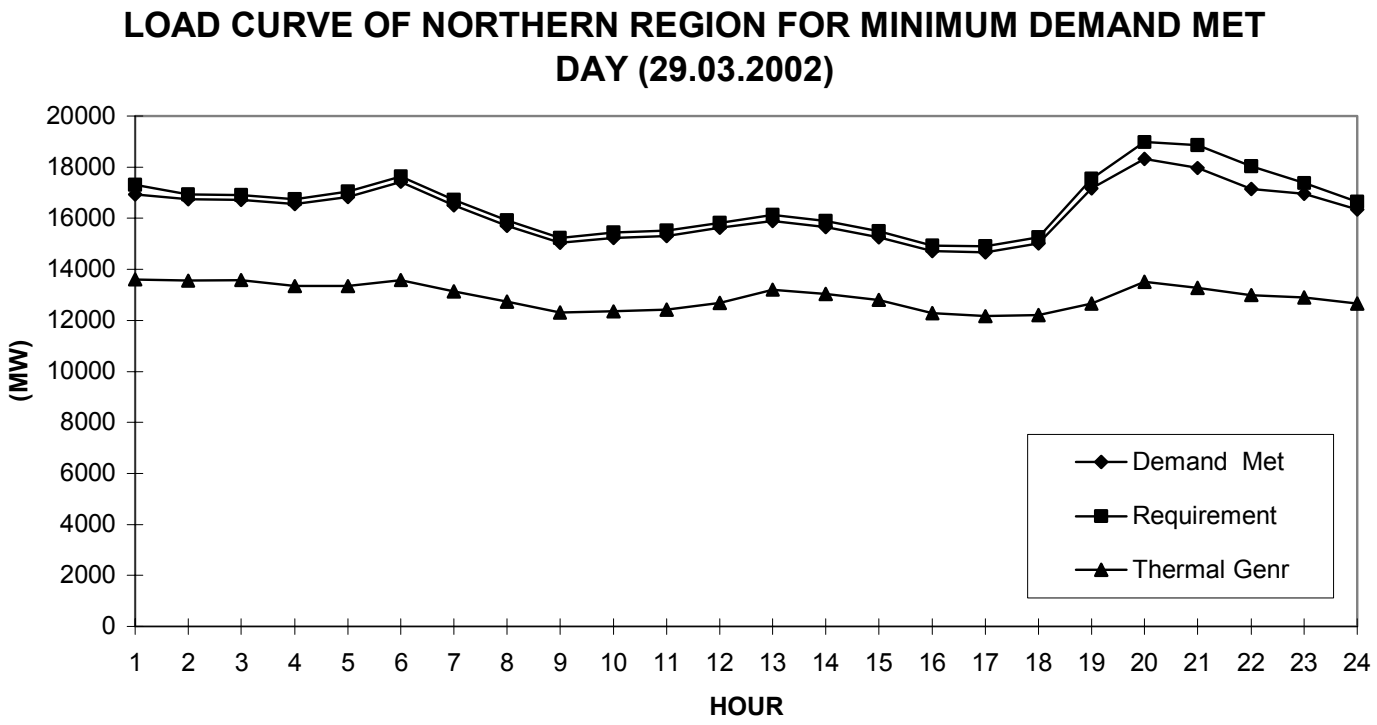
HOUR
Demand Met
Requirement
Thermal Genr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(MW)
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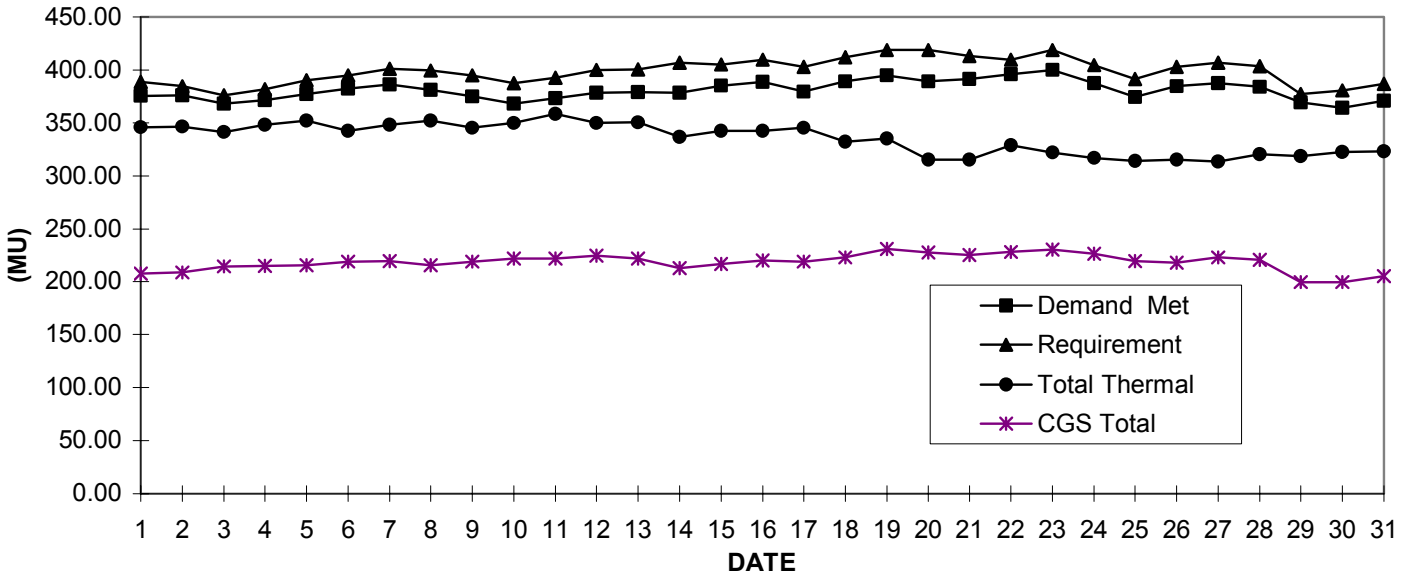
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HOUR
Demand Met
Requirement
Thermal Genr

DAYWISE DEMAND MET AND REQUIREMENT (In MU) OF NORTHERN REGION DURING MARCH 2002



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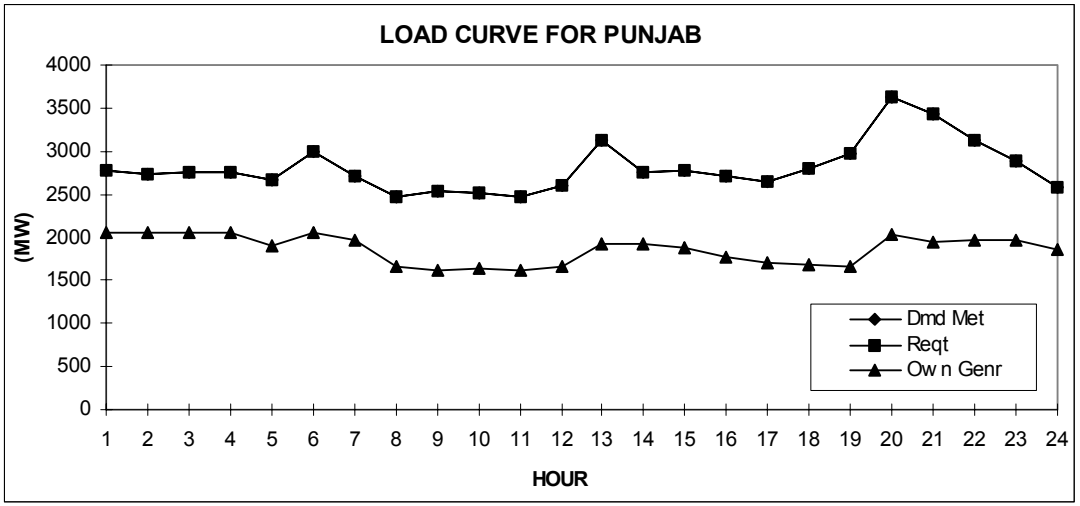

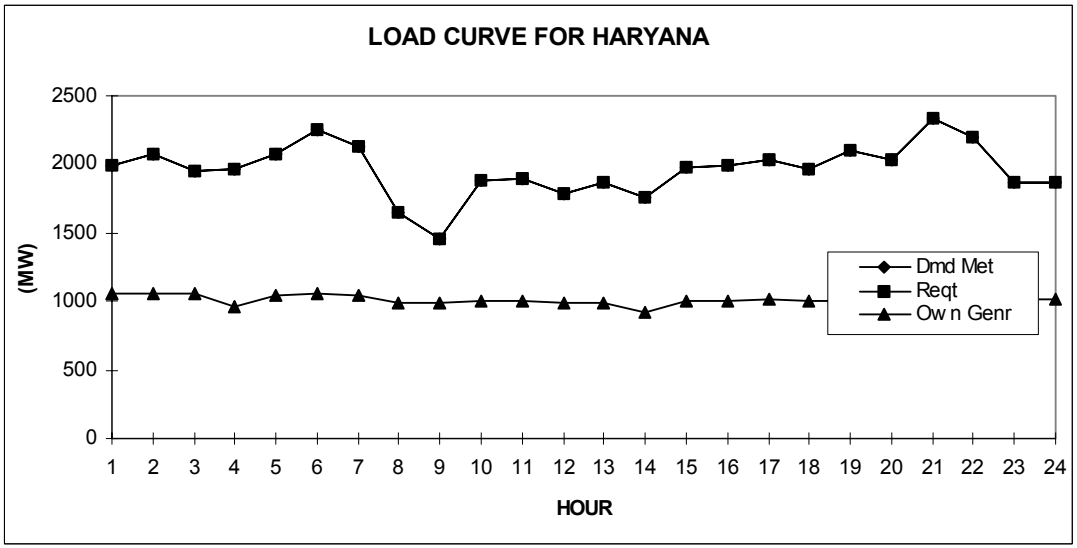

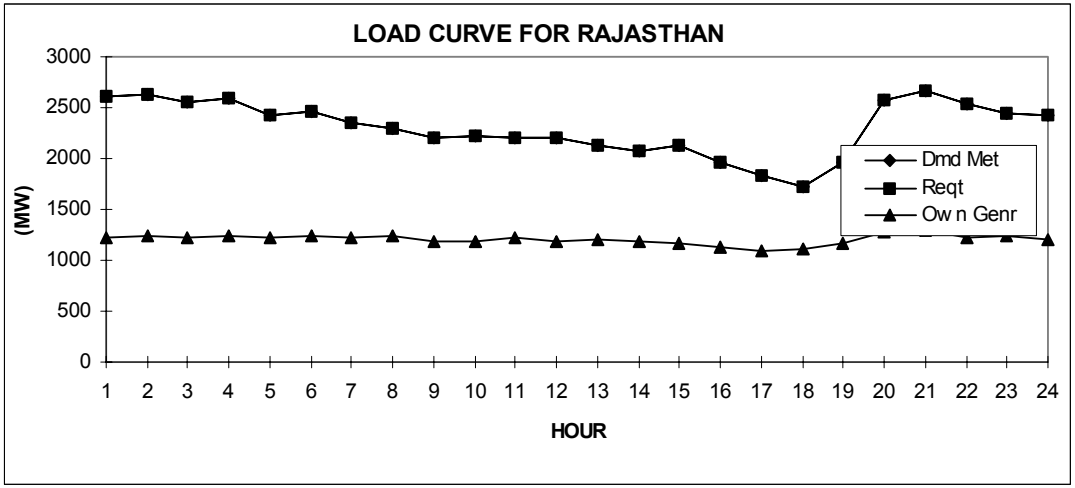
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(MW)
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HOUR
Dmd Met
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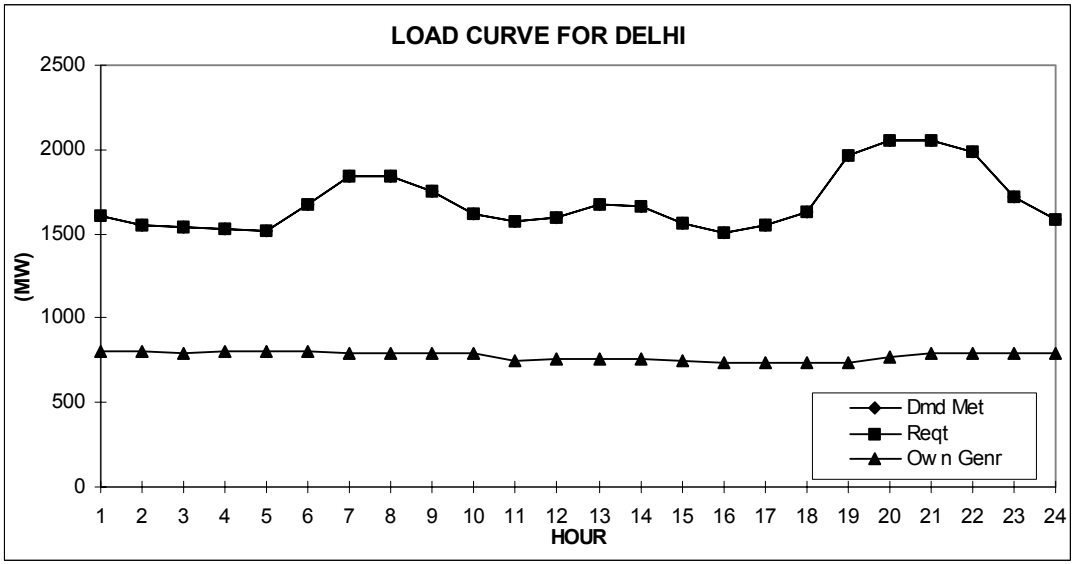
Ow n Genr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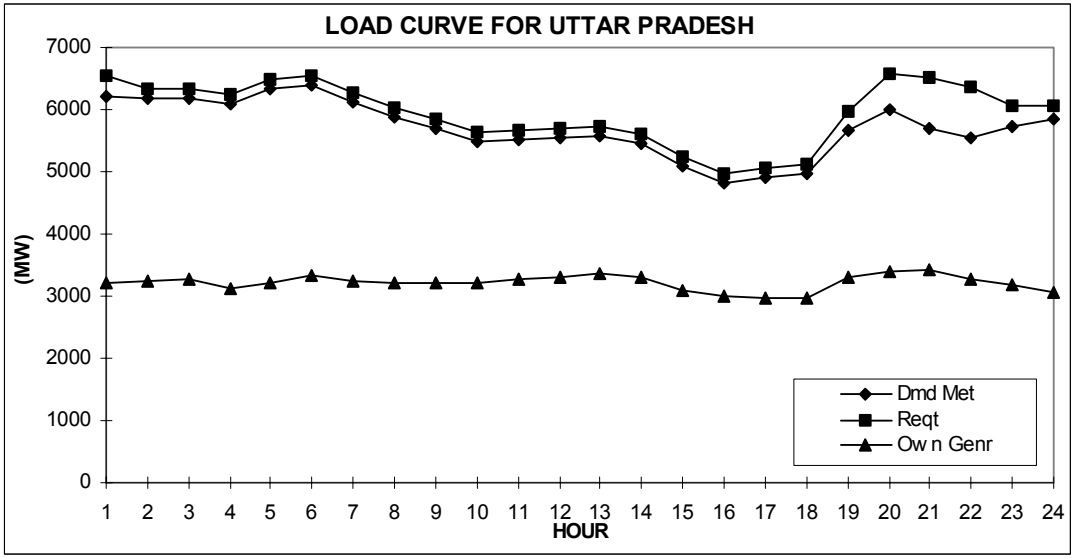
Dmd Met
Reqt
Ow n Genr



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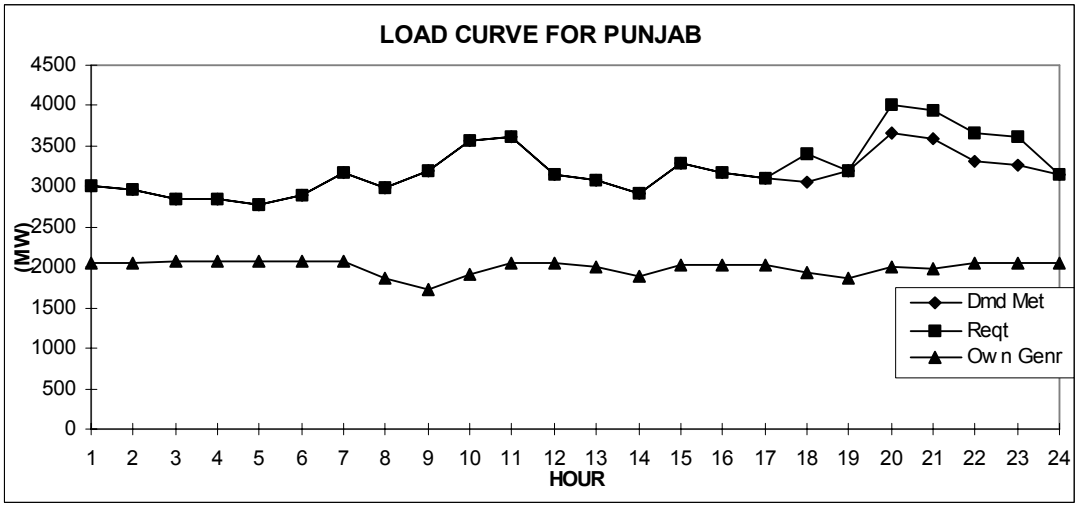

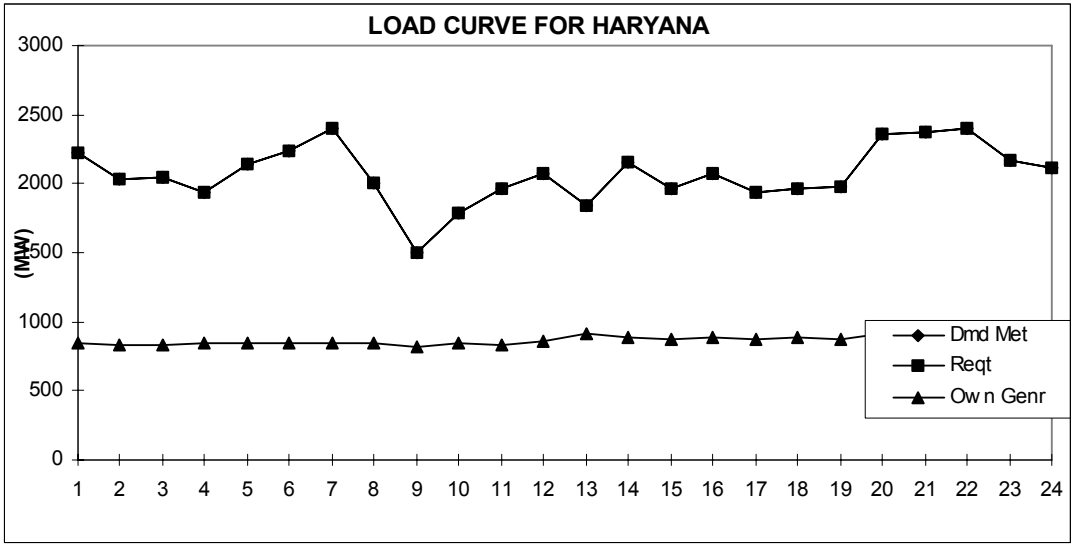
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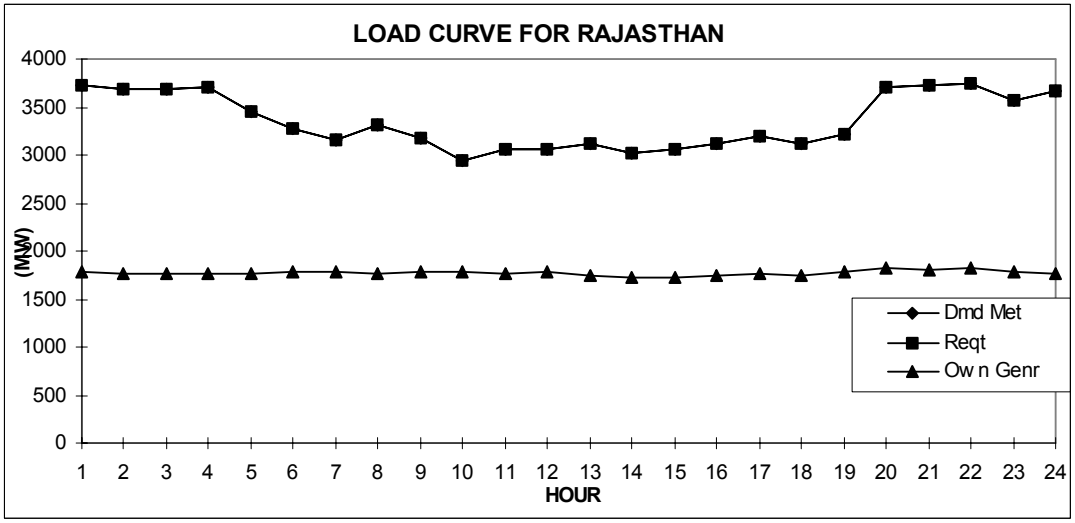
Ow n Genr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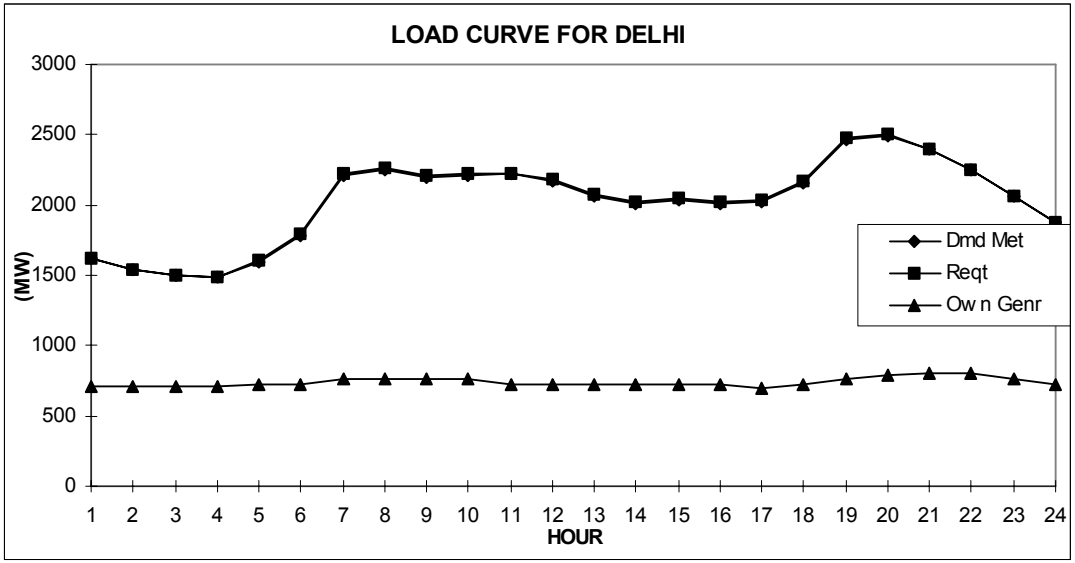
HOUR
Dmd Met
Reqt
Ow n Genr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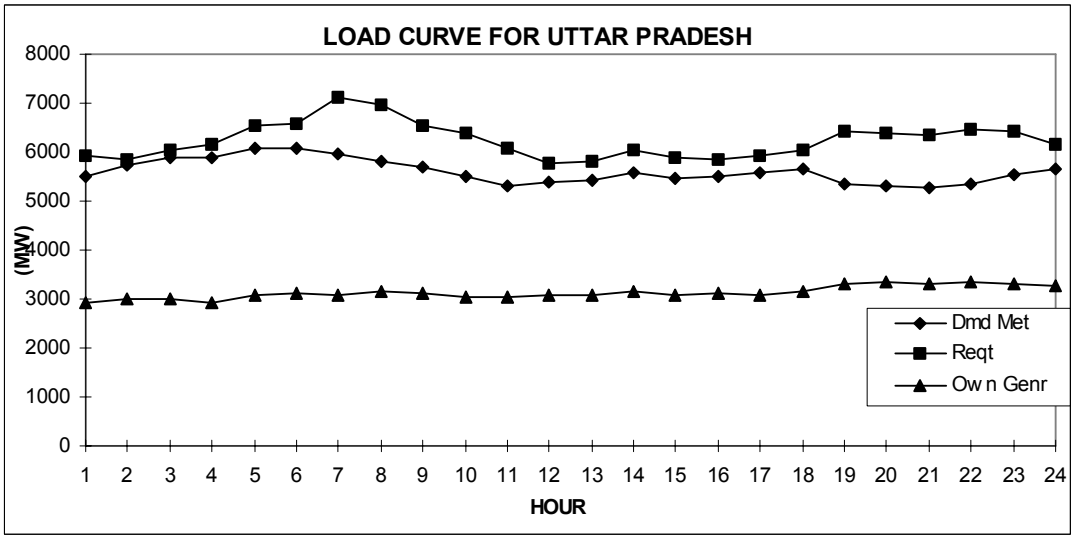
LOAD CURVE FOR UTTAR PRADESH
(MW)
HOUR
Dmd Met
Reqt
Ow n Genr

MINOR GRID INCIDENTS DURING MARCH 2002

S No.	DATE	TIME	INCIDENT
1	16.03.2002	07:17	In this incident 400 kV Dadri-Mandaula ckt –I tripped due to brusting of Y-phase CT at Mandaula end . 400 kV Dadri-Mandaula ckt-II also tripped subsequently . The whole Grid including Delhi system marginally saved from collapse by backing down generation at Singrauli/Rihand and commensurate load-shedding in Delhi/Harayana. Both the circuits were normalized at 07:37 hrs. & 10:11 hrs. respectively.