



GRID REPORT

November 2001

SYSTEM OPERATION REPORT OF NORTHERN REGION FOR THE MONTH OF NOVEMBER, 2001

A. SUMMARY REPORT:

I Important events:

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

NIL

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

The average system frequency during the month of November 2001, was 49.88 Hz and frequency remained between 49.0 & 50.5 Hz for 80.23 % 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 to be done in Uri HEP due to tripping of 400kV Uri-Wagoora D/C and in Tanakpur HEP due to tripping of 220 kV Tanakpur-Bareilly D/C.

There was no major grid disturbance in the region during November 2001.

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

NIL

II. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING NOVEMBER 2001(All figs. in
MU)

Sl. No.	State/UT/ System	NTPC (Excl. BTPS,		NHPC		NPC (Excl. RAPS-A)		BBMB		TOTALS	
		Tanda & FGPS) Entitlement	Actual	Entitlement	Actual	Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	30.75	23.01	2.95	2.96	2.97	0.00	44.29	43.88	80.96	69.85
2	Delhi	750.98	721.83	30.29	30.30	51.64	5.81	0.00	0.00	832.91	757.95
3	Haryana	366.38	366.87	34.78	34.78	23.22	37.63	181.08	182.15	605.47	621.42
4	H.P.	119.38	122.64	14.94	14.93	10.87	15.71	19.94	20.01	165.13	173.30
5	J & K	241.37	261.63	71.02	71.01	75.81	79.08	0.00	0.00	388.19	411.72
6	Punjab	363.29	343.02	56.46	56.47	29.05	2.50	256.30	257.76	705.10	659.75
7	Rajasthan	626.79	650.04	23.58	23.58	174.80	229.48	169.67	170.18	994.84	1073.28
8	U.P.	1395.14	1437.15	50.59	50.58	83.65	81.78	0.00	0.00	1529.38	1569.51
9	MP / N.F.F.	3.73	14.23	0.00	0.00	0.00	0.00	14.40	11.70	18.13	25.92
10	Bihar	0.00	2.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17
11	Trans.										
11	Losses	101.79	101.78	5.62	5.62	8.13	8.13	37.13	37.13	152.67	152.66
12	Others	68.88	24.13	0.00	0.00	0.00	0.00	0.00	0.00	68.88	24.13
	Total	4068.49	4068.49	290.24	290.24	460.13	460.13	722.82	722.82	5541.67	5541.67

III. INTER REGIONAL EXCHANGES IN MU AND PEAK MW

	Energy (MU)	Peak MW
a. Import over HVDC Back to Back at Vindhyachal	5.49	200
b. M.P. to Rajasthan(Ujjain - Kota)	0.00	0
c. Eastern region to Northern region (Import)	141.39	250
d. Export over HVDC Back to Back at Vindhyachal	77.79	500
e. 220 KV Auraiya -Malanpur	13.11	25
f. Northern region to Bihar (Export)	1.95	10
g. Tanakpur to Mahendranagar(NEPAL) (Export)	6.00	11

IV. FREQUENCY PROFILE

a. Maximum frequency	51.32	Hz	at	1739	hours on	17-11-2001
Minimum frequency	48.16	Hz	at	0404	hours on	07-11-2001
Average frequency	49.88	Hz				

b. Frequency distribution in %

Hz	< 48.5	<49.0	49.0-50.5	> 50.5
%	1.27	7.72	80.23	12.05

c. Frequency Variation Index

Monthly Average	3.35
Maximum	8.65
Minimum	1.89

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	2.33	2.34	0.01	0.43
Delhi	44.16	44.80	0.64	1.43
Haryana	43.37	43.85	0.48	1.09
H.P.	8.85	8.85	0.00	0.00
J & K	17.14	18.11	0.97	5.36
Punjab	59.97	61.36	1.39	2.27
Rajasthan	72.22	72.22	0.00	0.00
U.P.	122.44	131.45	9.01	6.85
N.F.F./Rail	1.20	1.20	0.00	0.00
Total	371.68	384.18	12.50	3.25

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	140	140	0	0	0.00	0.00
Delhi	2481	2645	164	164	6.20	6.20
Haryana	2528	2593	65	180	2.51	6.94
H.P. *	519	519	0	0	0.00	0.00
J & K *	909	1179	270	325	22.90	27.57
Punjab	3466	3716	250	250	6.73	6.73
Rajasthan	3603	3603	0	0	0.00	0.00
U.P.	6887	7492	605	605	8.08	8.08
N.F.F./Rail	59	59	0	0	0.00	0.00
Region	20072	21733	1661	2434	7.64	11.20

Diversity Factor = 1.08

* Approximate and Estimated

B. DETAILED REPORT

I. 1. INSTALLED / EFFECTIVE CAPACITY AT THE END OF NOVEMBER 2001

# INSTALLED / EFFECTIVE CAPACITY AT THE END OF NOVEMBER 2001					
-	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 Micro	3x 5.65	16.95	3x 5.65	16.95
(f)	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
(l)	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 Hydrel		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 Rana Pratap Sagar	2x25+2x45	140.00	2x25+2x45	140.00
(b)	(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	2x250	500.00	2x250	500.00
(g)	Ramgarh GT	1x3	3.00	1x3	3.00
(i)	Ramgarh GT EXT.	1x35.5	35.50	1x35.5	35.50
	Total Thermal		1388.50		1388.50
(J)	Wind farm	2+2	4.00	2+2	4.00
	Total Rajasthan		1826.82		1826.82
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)			27817.49		27304.63

2. SUMMARY OF THE EFFECTIVE GENERATING CAPACITY(MW) IN THE NORTHERN REGION AT THE END OF NOVEMBER 2001

Agency / Source	Hydro	Thermal	Gas/Diesel/Wind	Nuclear	Total	% of Total
NTPC	---	5825.00	2344.04	---	8169.04	29.92%
NHPC	1984.20	---	---	---	1984.20	7.27%
NPC	---	---	---	1180.00	1180.00	4.32%
BBMB	2852.15	---	---	---	2852.15	10.45%
CHANDIGARH	---	---	1.40	---	1.40	0.01%
DELHI	---	396.50	282.00	---	678.50	2.48%
HARYANA	48.00	1025.00	25.20	---	1098.20	4.02%
HIMACHAL	411.97	---	0.13	---	412.10	1.51%
J&K	225.19	---	182.18	---	407.37	1.49%
PUNJAB	1145.10	2130.00	---	---	3275.10	11.99%
RAJASTHAN	434.32	1350.00	42.50	---	1826.82	6.69%
UP	1510.75	3909.00	---	---	5419.75	19.85%
Total	8611.68	14635.50	2877.45	1180.00	27304.63	100.00%
% of TOTAL	31.54%	53.60%	10.54%	4.32%	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 27351.63 MW.

3. BREAKUP OF EFFECTIVE HYDRO CAPACITY (MW) IN NORTHERN REGION AS ON 30.11.2001

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

NIL

II. SALIENT FEATURES OF SYSTEM CONDITIONS

1. Effective Generation Capacity at the end of month

Constituent	Effective Capacity		Increase	
	November 2001	November 2000	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	1826.82	1826.82	0.00	0.00
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	27304.63	26435.13	869.50	3.29

2. Power Supply Position

State/UT	November 2001			November 2000			Percentage increase over 2000	
	Energy(MU/day)			Energy(MU/day)				
	Demand met	Reqd.	%Shortage	Demand met	Reqd.	%Shortage	Demand met	Reqd.
Chandigarh	2.33	2.34	0.43	2.31	2.31	0.00	0.87	1.30
Delhi	44.16	44.80	1.43	41.63	43.19	3.61	6.08	3.73
Haryana	43.37	43.85	1.09	41.64	42.73	2.55	4.15	2.62

HP	8.85	8.85	0.00	8.34	8.34	0.00	6.12	6.12
J&K	17.14	18.11	5.36	15.46	17.20	10.12	10.87	5.29
Punjab	59.97	61.36	2.27	56.93	57.25	0.56	5.34	7.18
Rajasthan	72.22	72.22	0.00	70.85	71.29	0.62	1.93	1.30
UP	122.44	131.45	6.85	114.88	126.85	9.44	6.58	3.63
NFF/Rail	1.20	1.20	0.00	0.14	0.14	0.00	757.14	757.14
REGION	371.68	384.18	3.25	352.18	369.30	4.64	5.54	4.03
Frequency Regime November 2001 November 2000								
Average (Hz)	49.88		49.49					
Above 50.5 Hz (%)	12.05		11.02					
Above 50.2 Hz (%)	32.59		22.35					
Below 49.5 Hz (%)	26.39		50.06					
Below 49.0 Hz (%)	7.72		30.10					
Below 48.5 Hz (%)	1.27		12.54					

3. Peak Power Supply Position

Off-Peak Power Supply Position

State/UT	November 2001			November 2000			Percentage increase over 2000	
	Peak (MW)			Peak (MW)				
	Demand met	Reqt.	%Shortage	Demand met	Reqt.	%Shortage	Demand met	Reqt.
Chandigarh	140	140	0.00	131	131	0.00	6.87	6.87
Delhi	2481	2645	6.20	2498	2653	5.84	-0.68	-0.30
Haryana	2528	2593	2.51	2295	2308	0.56	10.15	12.35
HP	519	519	0.00	585	585	0.00	-11.28	-11.28
J&K	909	1179	22.90	890	1040	14.42	2.13	13.37
Punjab	3466	3716	6.73	3276	3365	2.64	5.80	10.43
Rajasthan	3603	3603	0.00	3574	3574	0.00	0.81	0.81
UP	6887	7492	8.08	5859	7007	16.38	17.55	6.92
NFF/Rail	59	59	0.00	7	7	0.00	742.86	742.86
REGION	20072	21733	7.64	17751	19634	9.59	13.08	10.69

III. FREQUENCY PROFILE DURING NOVEMBER 2001

DATE	Average	MAX.		MIN.		Std dev	Frequency
	Hz	Hz	Time	Hz	Time	Hz	Var. Index(FVI)
1	49.57	50.64	15.47	48.16	18.09	0.43	3.67
2	49.73	50.88	8.03	48.32	19.01	0.47	2.90
3	49.84	51.20	13.04	48.72	0.08	0.43	2.11
4	50.13	50.52	1.52	49.60	0.19	0.22	2.06
5	49.87	50.72	20.55	48.20	17.34	0.46	2.27
6	50.09	51.20	23.42	48.32	6.37	0.58	3.44
7	50.29	51.32	4.04	48.36	6.55	0.56	3.99
8	50.22	51.20	22.00	48.20	18.08	0.46	2.56
9	50.06	51.16	10.29	48.28	19.03	0.46	2.16
10	49.90	51.12	13.03	48.20	17.43	0.51	2.75
11	49.92	50.96	17.11	48.52	17.52	0.43	1.89
12	49.83	50.92	23.58	48.24	6.48	0.61	3.98
13	49.97	51.16	17.04	48.28	7.03	0.53	2.82
14	50.13	51.24	16.04	48.48	18.23	0.62	4.05
15	50.06	51.16	13.03	48.44	19.05	0.47	2.26
16	49.63	51.00	18.02	48.28	8.25	0.54	4.26
17	49.15	50.00	21.00	48.16	17.39	0.38	8.65
18	49.92	51.20	4.30	48.60	19.08	0.50	2.56
19	49.81	50.60	1.58	48.20	19.03	0.51	3.01
20	49.51	50.68	17.58	48.16	4.21	0.64	6.56
21	49.41	50.84	13.12	48.16	5.43	0.60	7.02
22	49.89	50.96	13.03	48.40	17.54	0.52	2.81
23	49.81	50.64	1.25	48.56	7.41	0.46	2.44
24	49.69	50.72	13.04	48.16	8.08	0.53	3.71
25	49.94	51.08	23.58	48.28	8.59	0.50	2.52
26	50.39	51.16	0.48	49.40	5.55	0.40	3.18
27	49.90	50.92	17.04	48.24	16.46	0.51	2.66

28	49.92	50.92	17.05	48.20	7.04	0.50	2.53
29	50.00	50.80	2.07	48.52	18.18	0.46	2.15
30	49.88	51.08	15.00	48.40	7.06	0.59	3.63
Monthly	49.88	51.32		48.16		0.57	3.35

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

IV. VOLTAGE PROFILE DURING NOVEMBER 2001

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	404	386	412	368	422	392	412	378	213	197
2	404	384	412	382	420	389	408	385	214	195
3	410	388	412	384	422	396	409	386	215	198
4	408	402	413	393	418	409	407	385	214	210
5	404	388	412	394	418	392	406	383	212	196
6	406	391	412	386	425	392	407	380	215	196
7	410	389	414	380	422	392	408	382	215	198
8	410	392	412	382	425	394	415	384	216	200
9	410	388	414	384	420	394	412	386	216	200
10	408	391	414	382	420	392	412	383	214	200
11	410	395	416	390	425	396	412	389	215	204
12	410	393	418	390	425	394	410	387	216	201
13	404	382	412	380	420	392	412	386	214	198
14	413	389	418	388	429	394	410	389	215	201
15	410	391	418	394	427	400	415	390	215	203
16	404	388	412	388	420	398	412	386	214	200
17	406	380	406	380	422	394	408	387	215	201
18	406	386	412	386	425	394	408	382	215	204
19	410	386	414	382	422	389	408	383	215	200
20	404	382	412	380	418	394	410	383	215	196

21	404	380	408	374	420	394	414	387	213	195
22	399	380	408	376	416	389	413	373	210	192
23	404	375	404	372	418	389	414	386	215	196
24	408	379	414	388	420	387	415	379	215	195
25	410	382	414	378	422	389	413	384	215	198
26	411	384	418	378	425	389	417	384	216	197
27	410	384	416	378	425	387	412	382	215	197
28	410	388	414	382	422	389	412	378	215	195
29	411	391	414	382	418	387	413	382	216	196
30	411	384	414	384	420	392	408	386	214	202
Month	413	375	418	394	429	387	417	373	216	192

V. PERFORMANCE OF GENERATING STATIONS DURING NOVEMBER 2001

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	399.06	365.59	3558.66	3233.87
(b)	Singrauli STPS	2000.00	1252.44	1169.99	9921.52	9250.80
(c)	Rihand STPS	1000.00	714.20	663.30	4853.22	4468.74
(d)	Dadri NCTPS	840.00	558.54	515.55	4404.19	4046.75
(e)	Unchahar-I TPS	420.00	293.63	268.52	2054.90	1863.61
(f)	Unchahar-II TPS	420.00	254.48	233.24	2199.40	1991.76
(g)	Tanda TPS	440.00	216.01	189.03	1312.13	1148.13
(h)	Anta GPS	419.33	279.92	275.75	2110.30	2067.15
(i)	Auraiya GPS	663.36	350.52	345.16	3351.74	3305.87
(j)	Dadri GPS	829.78	540.56	527.89	4009.00	3904.09
(k)	Faridabad GPS	431.57	216.73	211.53	1991.23	1940.42
	Total NTPC	8169.04	5076.09	4765.53	39766.28	37221.19
B	NHPC					

(a)	Bairasiul	180.00	20.74	20.74	473.20	457.37
(b)	Salal	690.00	98.91	98.09	2537.34	2515.70
(c)	Tanakpur HPS	94.20	24.73	24.44	348.57	344.85
(d)	Chamera HPS	540.00	53.54	52.58	1673.23	1668.54
(e)	Uri HPS	480.00	101.93	100.37	1464.57	1448.61
	Total NHPC	1984.20	299.86	296.22	6496.90	6435.07
C	NPC					
(a)	RAPS -A	300.00	146.14	133.59	951.78	869.88
(b)	RAPS -B	440.00	249.85	225.67	1877.49	1697.27
(c)	NAPS	440.00	260.06	234.46	2058.88	1849.40
	Total NPC	1180.00	656.05	593.72	4888.14	4416.54
2	JOINTLY OWNED (BBMB)					
(a)	Bhakra Complex	1465.15	474.82	472.70	3724.24	3706.09
(b)	Dehar	990.00	112.51	112.51	2461.16	2455.22
(c)	Pong	366.00	137.61	137.61	856.80	852.84
	Total BBMB	2821.15	724.94	722.82	7042.20	7014.15
3	DELHI					
(a)	Indra Prastha	247.50	75.16	66.14	578.33	508.93
(b)	Rajghat	149.00	79.89	71.10	381.73	339.74
(c)	Gas Turbines	282.00	79.92	77.53	807.59	783.36
	Total DELHI	678.50	234.98	214.77	1767.65	1632.03
4	HARYANA					
(a)	WYC	48.00	15.04	14.89	163.69	162.06
(b)	Faridabad (New)	165.00	57.87	50.05	505.02	436.84
(c)	Panipat	860.00	405.09	356.48	2714.43	2388.70
(d)	Magnum Diesel(IPP)	25.20	9.45	9.36	64.44	63.90
	Total Haryana	1098.20	487.45	430.78	3447.59	3051.50
5	HP					
(a)	Giri	60.00	9.53	9.48	152.08	151.41
(b)	Bassi	60.00	1.24	1.23	217.12	216.42

(c)	Binwa	6.00	1.37	1.35	13.67	13.59
(d)	Rongtong (+Nogli+Micro+Thirot+Sal-2)	15.02	0.00	0.00	17.77	17.56
(e)	Andhra	16.95	2.45	2.43	49.85	49.65
(f)	Bhabha (H)	120.00	21.06	21.00	402.09	401.24
(g)	Baner (H)	12.00	1.18	1.17	24.97	24.89
(h)	Gaj (H)	10.50	1.24	1.24	32.79	32.62
(i)	Gumma	3.00	0.46	0.45	6.44	6.39
(j)	Ghanvi	22.50	3.98	3.98	27.47	27.39
(k)	Malana (IPP)	86.00	6.77	6.77	138.32	138.32
	Total HP	411.97	49.26	49.09	1082.56	1079.47
6	J & K					
(a)	Lower Jhelum	105.00	11.86	11.75	233.54	231.20
(b)	Upper Sindh	57.60	6.98	6.91	134.97	133.62
(c)	Ganderbal	15.00	3.14	3.11	21.24	21.03
(d)	Mohra	9.00	0.00	0.00	0.00	0.00
(e)	Chenani	25.30	2.66	2.64	50.56	50.06
(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	24.65	24.40	440.31	435.91
7	PUNJAB					
(a)	Jogindernagar/ Shanan	110.00	16.83	16.82	399.76	398.21
(b)	UBDC	90.00	26.48	26.39	275.08	273.61
(c)	Mukerian	207.00	112.39	112.19	664.83	662.00
(d)	Anandpur Sahib (APS)	134.00	34.20	34.14	377.22	375.63
(e)	Ranjit Sagar HPS	600.00	99.82	99.64	1138.28	1135.56
(f)	Small Hydel	4.10	0.82	0.81	6.43	6.37
(g)	GNDTPS (Bhatinda)	440.00	189.20	171.12	1856.32	1676.13
(h)	GGSTPS (Ropar)	1260.00	616.27	565.97	5867.36	5383.00
(i)	Jhalkeri Rice Straw Fired	10.00	0.00	0.00	0.00	0.00

(j)	Lehra Mohabbat TPS	420.00	249.66	226.43	2165.41	1966.57
	Total Punjab	3275.10	1345.68	1253.50	12750.68	11877.07
8	RAJASTHAN					
(a)	Mahi Bajaj Sagar	140.00	10.65	10.65	34.56	34.55
(b)	Rana Pratap Sagar (RPS)	172.00	57.69	57.66	133.44	133.18
(c)	Jawahar Sagar (JS)	99.00	36.80	36.66	113.37	112.91
(d)	Anoopgarh	9.00	0.00	0.00	0.79	0.79
(e)	Small Hydro	14.32	0.00	0.00	3.99	3.99
(f)	Kota TPS	850.00	577.46	523.18	4206.24	3800.04
(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	500.00	339.07	307.25	2442.65	2215.93
(j)	Wind Farm	4.00	0.86	0.86	3.72	3.72
	Total Rajasthan	1826.82	1022.52	936.24	7057.85	6424.20
9	U.P.					
	<u>HYDRO</u>					
(a)	Rihand	300.00	108.05	106.97	689.19	682.29
(b)	Obra	99.00	39.22	38.82	269.66	266.97
(c)	Matatilla	30.00	22.73	22.50	91.40	90.48
(d)	Khatima	41.40	13.98	13.84	138.10	136.72
(e)	Ramganga	198.00	3.77	3.74	107.01	105.94
(f)	Ganga Canal	43.40	12.20	12.08	107.22	106.15
(g)	Yamuna (I & IV)	114.75	22.86	22.63	367.64	363.97
(h)	Chibro	240.00	31.48	31.16	585.14	579.28
(i)	Khodri	120.00	15.19	15.04	278.84	276.05
(j)	Chilla	144.00	38.94	38.55	444.21	439.77
(k)	Maneri Bhali	90.00	35.16	34.81	261.27	258.65
(l)	Khara	72.00	17.35	17.17	259.11	256.51
	Total U.P. (Hydro)	1492.55	360.93	357.32	3598.78	3562.79
	<u>THERMAL</u>					
(m)	Obra	160.00	32.42	28.37	145.03	126.90

(n)	Obra Extn. - I	282.00	52.11	45.59	391.03	342.15
(o)	Obra Extn. - II	1000.00	409.13	357.98	2945.63	2577.42
(p)	Panki	32.00				
(q)	Panki Extn.	210.00	92.16	80.64	742.78	649.93
(r)	Harduaganj - A	0.00				
(s)	Harduaganj - B	150.00				
(t)	Harduaganj - C	225.00	63.24	55.33	361.12	315.98
(u)	Paricha	220.00	86.59	75.76	631.54	552.60
(v)	Anpara - A	630.00	405.93	355.19	2831.69	2477.73
(w)	Anpara - B	1000.00	661.35	578.68	5215.15	4563.26
	Total U.P. (Thermal)	3909.00	1802.92	1577.55	13263.97	11605.97
	Total U.P.	5401.55	2163.85	1934.87	16862.75	15168.77
Total Region		27246.72	12085.30	11221.96	101602.91	94755.90

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 NOVEMBER 2001

(All figs. in
MU)

Sl. No.	State/UT/ System	Singrauli STPS		Rihand STPS		BTPS	W. Grid	VSTPS
		Entitlement	Actual	Entitlement	Actual	Actual	Actual	(WR) Actual
1	Chandigarh	1.62	1.62	7.43	6.98	0.00	0.02	0.00
2	Delhi	92.10	92.10	72.01	72.08	365.59	0.22	0.00
3	Haryana	134.62	134.62	61.22	61.26	0.00	0.16	0.00
4	H.P.	17.37	17.37	33.30	33.32	0.00	0.05	0.00
5	J & K	30.46	30.46	63.80	63.86	0.00	0.20	0.00
6	Punjab	105.63	105.63	70.86	70.93	0.00	0.24	0.00
7	Rajasthan	202.35	202.35	89.34	89.40	0.00	0.23	0.00
8	U.P.	470.08	470.08	242.21	242.36	0.00	0.50	0.00
9	MP	0.00	0.00	0.00	0.00	0.00	3.73	0.00
10	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Bihar Trans.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Losses	38.07	38.07	23.12	23.12	0.00	0.06	0.00
	TOTAL	1092.30	1092.30	663.29	663.29	365.59	5.39	0.00

Note :- Singrauli sentout excludes 77.6976390348692 MU supplied to Western Grid

(All figs. in
MU)

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	1.46	0.08	2.29	0.00
2	Delhi	383.00	353.90	16.34	17.72	19.06	9.37
3	Haryana	2.54	2.52	14.39	13.84	22.87	22.63
4	H.P.	0.00	0.18	6.56	6.70	11.47	12.75
5	J & K	0.00	0.80	12.05	13.11	25.58	36.34

6	Punjab	0.00	0.00	18.98	13.72	26.42	11.96
7	Rajasthan	87.95	87.32	21.54	22.97	37.66	51.72
8	U.P.	42.05	61.83	167.86	171.02	79.78	80.35
9	MP	0.00	7.46	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	1.54	0.00	0.00	0.00	0.00
12	Trans. Losses	0.00	0.00	9.35	9.35	8.11	8.11
	Total	515.54	515.54	268.53	268.53	233.24	233.24

Note :

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

VI. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING NOVEMBER 2001

(All figs. in
MU)

Sl. No.	State/UT/ System	Anta GPS		Auraiya GPS		Uri HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	3.65	3.65	3.22	0.88	0.71	0.71
2	Delhi	31.04	31.04	39.41	40.54	10.84	10.84
3	Haryana	22.64	22.64	32.18	30.15	5.44	5.44
4	H.P.	13.91	13.91	17.36	17.51	2.69	2.69
5	J & K	26.16	26.16	33.26	34.35	33.23	33.23
6	Punjab	30.36	30.36	38.87	33.84	13.51	13.51
7	Rajasthan	63.86	63.86	49.06	50.12	8.90	8.90
8	U.P.	73.11	73.11	119.75	122.06	24.04	24.04
9	MP	0.00	0.00	0.00	3.04	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	0.63	0.00	0.00
12	Trans. Losses	11.03	11.03	12.05	12.05	1.00	1.00
	TOTAL	275.76	275.76	345.16	345.16	100.37	100.37

(All figs. in
MU)

Sl. No.	State/UT/ System	Dadri GPS		Bairasiul HPS		Salal HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	3.72	2.44	0.00	0.00	0.26	0.26
2	Delhi	53.04	60.10	2.19	2.19	11.07	11.07
3	Haryana	39.29	42.56	6.07	6.07	14.32	14.32
4	H.P.	19.36	20.86	2.40	2.40	0.94	0.94
5	J & K	42.51	49.00	0.00	0.00	34.58	34.58
6	Punjab	71.93	76.33	9.25	9.25	25.35	25.35
7	Rajasthan	67.46	74.73	0.00	0.00	2.81	2.81
8	U.P.	161.70	177.74	0.00	0.00	7.78	7.78
9	MP	0.00	0.00	0.00	0.00	0.00	0.00
10	Railways	68.88	24.13	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	0.83	0.83	0.98	0.98
	Total	527.89	527.89	20.74	20.74	98.09	98.09

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

VI. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING NOVEMBER 2001

(All figs. in
MU)

Sl. No.	State/UT/ System	Tanakpur HPS		Chamera HPS		RAPS -A	RAPS -B		Tanda TPS
		Entitlement	Actual	Entitlement	Actual	Actual	Entitlement		Actual
1	Chandigarh	0.05	0.05	1.93	1.93	0.00	0.00	0.00	0.00
2	Delhi	2.32	2.32	3.87	3.87	0.00	24.37	0.16	0.00
3	Haryana	1.16	1.16	7.79	7.79	0.00	2.91	14.12	0.00
4	H.P.	0.61	0.61	8.30	8.30	0.00	0.00	3.98	0.00
5	J & K	1.28	1.28	1.93	1.93	0.00	52.54	36.83	0.00
6	Punjab	3.31	3.31	5.04	5.04	0.00	2.81	0.00	0.00
7	Rajasthan	2.15	2.15	9.72	9.72	133.59	143.05	162.90	0.00

8	U.P.	7.00	7.00	11.77	11.77	0.00	0.00	7.67	189.03
9	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Trans.								
10	Losses	0.57	0.57	2.24	2.24	0.00	0.00	0.00	0.00
11	Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	18.45	18.45	52.59	52.59	133.59	225.67	225.67	189.03

Note :- Tanakpur sentout excludes 6 MU supplied to Nepal

(All figs. in
MU)

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	2.97	0.00	44.29	43.88	0.00	0.00	0.00	7.35
2	Delhi	27.27	5.65	0.00	0.00	0.00	0.00	0.00	44.76
3	Haryana	20.31	23.51	127.36	128.42	31.92	21.81	211.53	36.48
4	H.P.	10.87	11.73	11.66	11.73	8.28	0.00	0.00	0.00
5	J & K	23.27	42.26	0.00	0.00	0.00	0.00	0.00	7.35
6	Punjab	26.24	2.50	175.72	177.18	47.87	32.71	0.00	0.00
7	Rajasthan	31.75	66.58	72.89	73.40	19.94	76.84	0.00	7.35
8	U.P.	83.65	74.11	0.00	0.00	0.00	0.00	0.00	38.10
9	N.F.F.	0.00	0.00	14.40	11.70	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
	Trans.								
11	Losses	8.13	8.13	26.38	26.38	4.50	6.25	0.00	0.00
	Total	234.46	234.46	472.70	472.70	112.51	137.61	211.53	141.38

Note :

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

VII. BILATERAL EXCHANGES IN THE NORTHERN REGION DURING NOVEMBER 2001

	Chandigarh	Delhi	Haryana	Himachal	J & K	Punjab	Rajasthan	UP	MP	Bihar	Others	Total
Chandigarh	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Delhi	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Haryana	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Himachal	0.000	0.000	0.000	0.000	0.000	127.000	0.000	0.000	0.000	0.000	0.000	127.000
J & K	0.000	0.000	0.000	0.000	0.000	790.000	0.000	0.000	0.000	0.000	0.000	790.000
Punjab	0.000	0.000	0.000	-127.000	-790.000	0.000	-143.500	0.000	0.000	0.000	0.000	-1060.500
Rajasthan	0.000	0.000	0.000	0.000	0.000	143.500	0.000	0.000	0.000	0.000	0.000	143.500
UP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bihar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Others	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	0.000	0.000	-127.000	-790.000	1060.500	-143.500	0.000	0.000	0.000	0.000	0.000

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

i) Haryana's share in IP station of Delhi	20.944	MU
ii) Himachal's share in Shanan power station of Punjab	2.640	MU
iii) Himachal's share in Yamuna hydro power complex of UP	20.490	MU
iv) Maruti to Haryana	20.168	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 30.11.2001**

(ALL FIGS IN MVAR)

CONSTITUENT	REQUIREMENT AT THE END OF 2001-2002	CAPACITORS AS ON 30.11.2001	CAPACITORS ADDITION DURING		ADDITIONAL REQUIRED DURING 2001-2002
		INSTALLED	2000-2001	April 01 - Nov 01	
Chandigarh	127	96	60	3	31
Delhi	2734	2377	201	141	357
Haryana	3080	2009	368	366	1071
H.P.	335	182	46	46	153
J & K	880	147	0	0	733
Punjab	4950	4565	384	134	385
Rajasthan	3300	2367	176	10	933
U.P.	5654	4345	279	139	1309
BBMB	381	381	0	0	0
TOTAL	21441	16469	1514	839	4972

SOURCE: Minutes of 323th OCC meeting of NREB held on 11th December, 2001.

IX. HYDRAULIC DATA FOR RESERVOIRS DURING NOVEMBER 2001

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 November 2001 (m) (ft)	493.06 1617.66	411.33 1349.50	266.76 875.20	349.84 1147.77	383.55 1258.38
Level on last day of November 2000 (m) (ft)	492.83 1616.88	404.04 1325.59	264.08 866.40	346.62 1137.21	381.35 1251.14
Live Capacity as on last day of November 2001(mhmt) (maft)	0.41 3.32	0.37 2.96	0.50 4.05	0.10 0.82	0.05 0.38
Live Capacity as on last day of November 2000(mhmt) (maft)	0.40 3.27	0.24 1.96	0.38 3.05	0.05 0.41	0.01 0.05
Energy content as on last day of November 2001 (MU)	1550.00	525.00	975.00	180.00	140.00
Energy content as on last day of November 2000 (MU)	1530.00	330.00	750.00	93.00	10.00

Maximum level	(m)	498.03	414.26	266.76	351.29	384.59
	(ft)	1633.95	1359.11	875.20	1152.52	1261.77
	(date)	01.11.2001	01.11.2001	01.11.2001	01.11.2001	01.11.2001
Minimum level	(m)	493.06	411.33	265.45	349.84	383.55
	(ft)	1617.66	1349.50	870.90	1147.77	1258.38
	(date)	30.11.2001	30.11.2001	30.11.2001	30.11.2001	30.11.2001

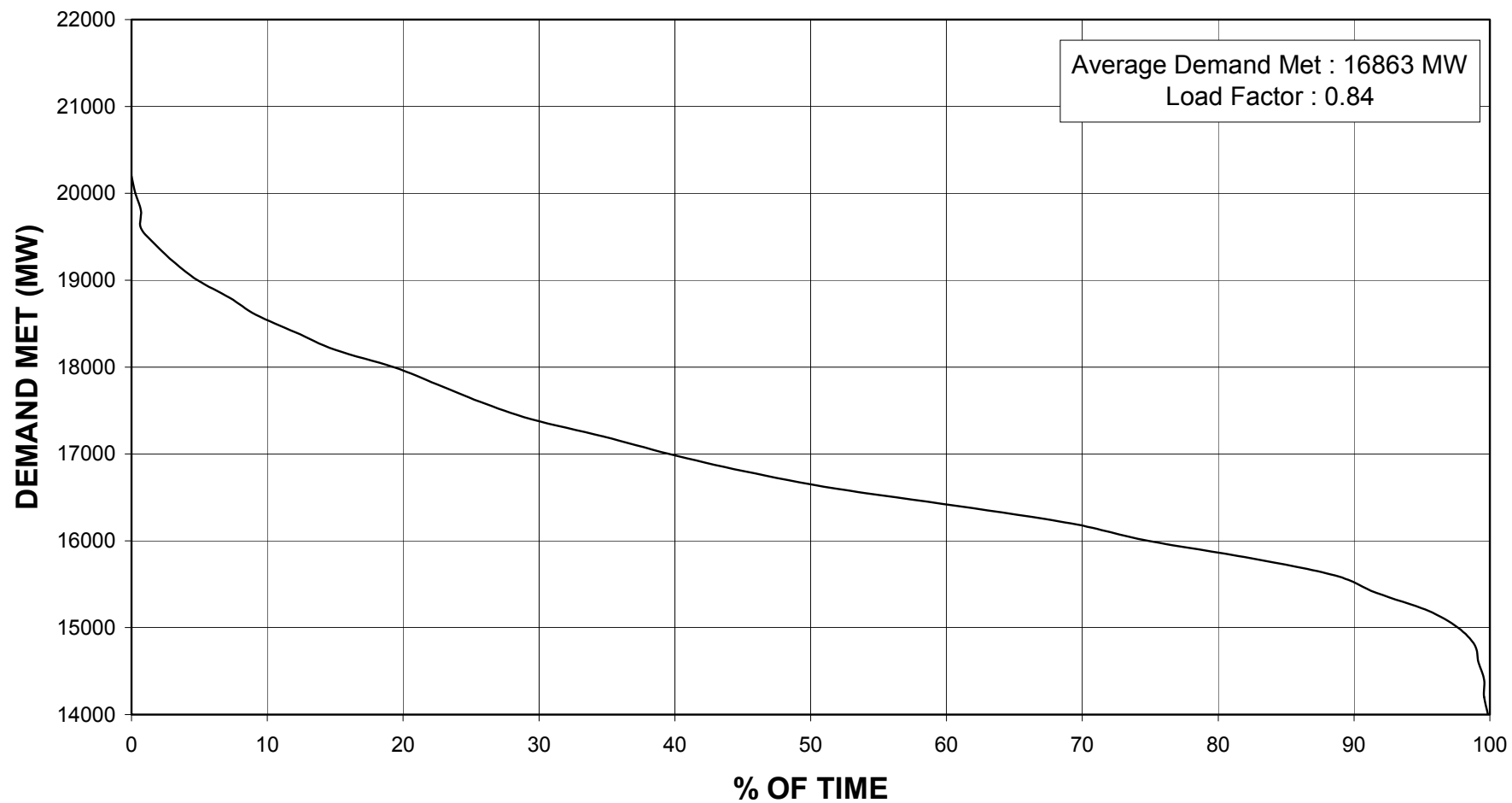
Energy content of Bhakra : Total Energy content at Bhakra, Ganguwal and Kotla power stations

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

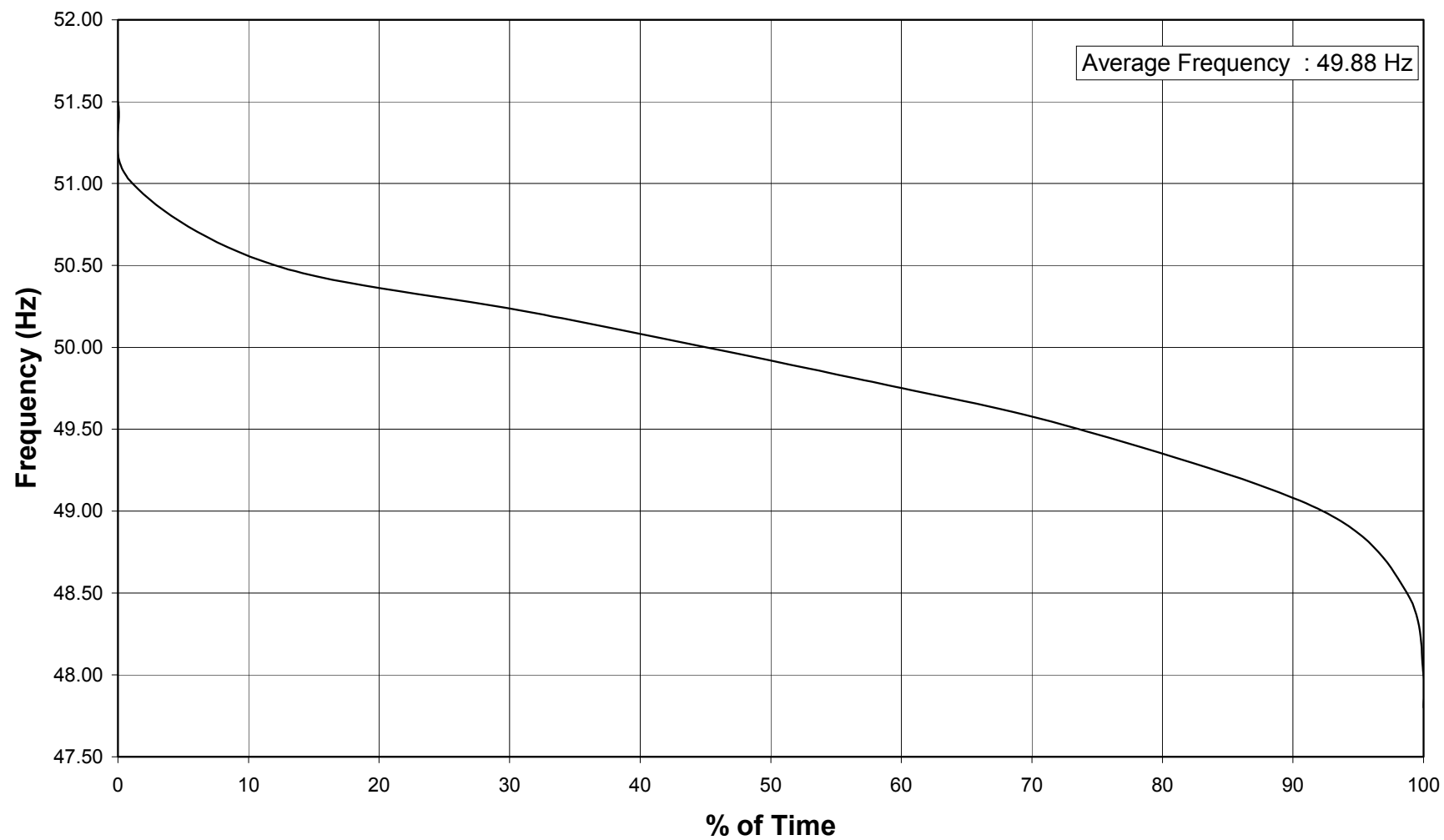
Energy content of RPS : Total Energy content of Rana Pratap Sagar and Jawahar Sagar Power Stations.

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

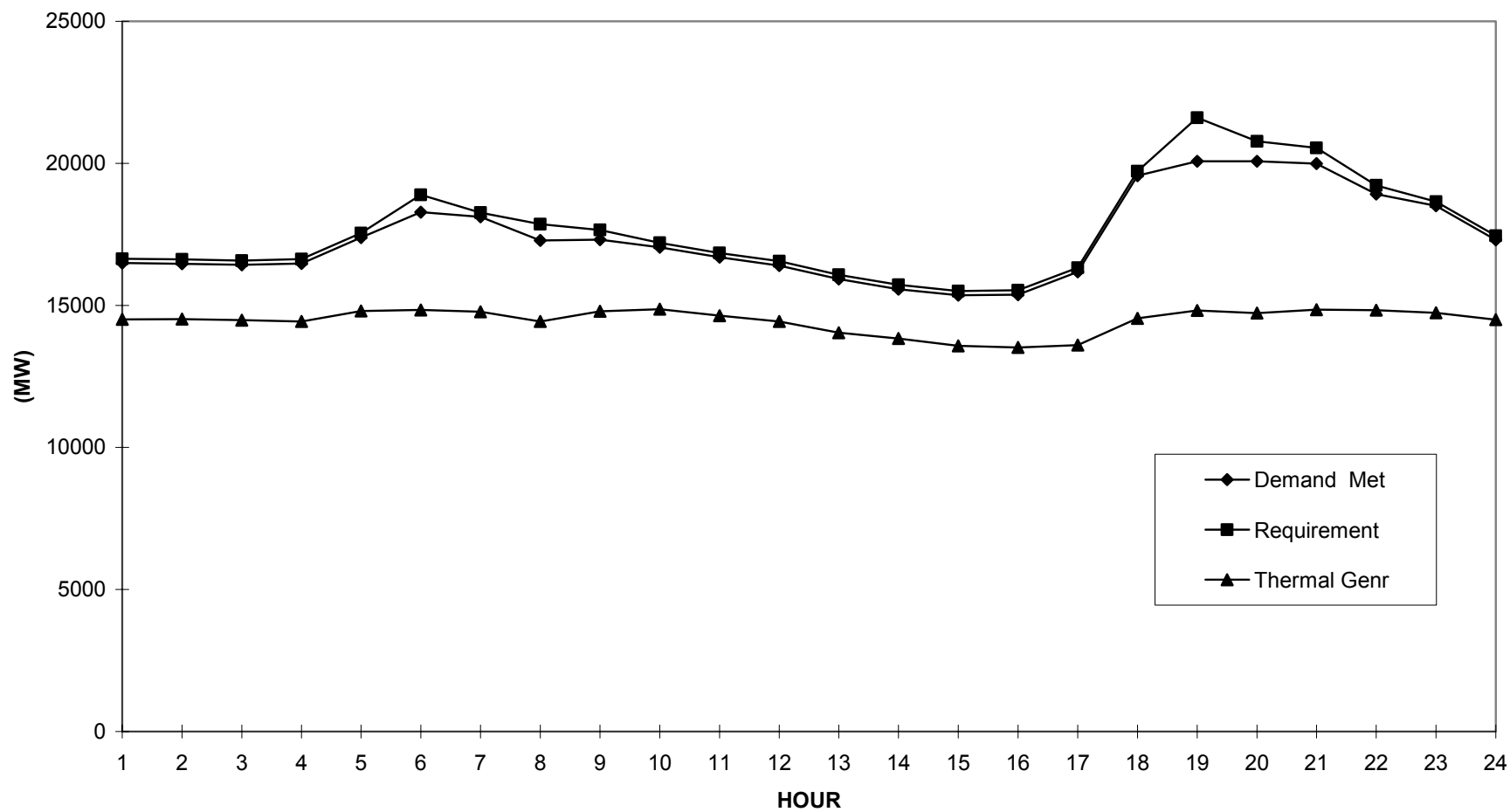
LOAD DURATION CURVE OF NORTHERN REGION FOR NOVEMBER 2001



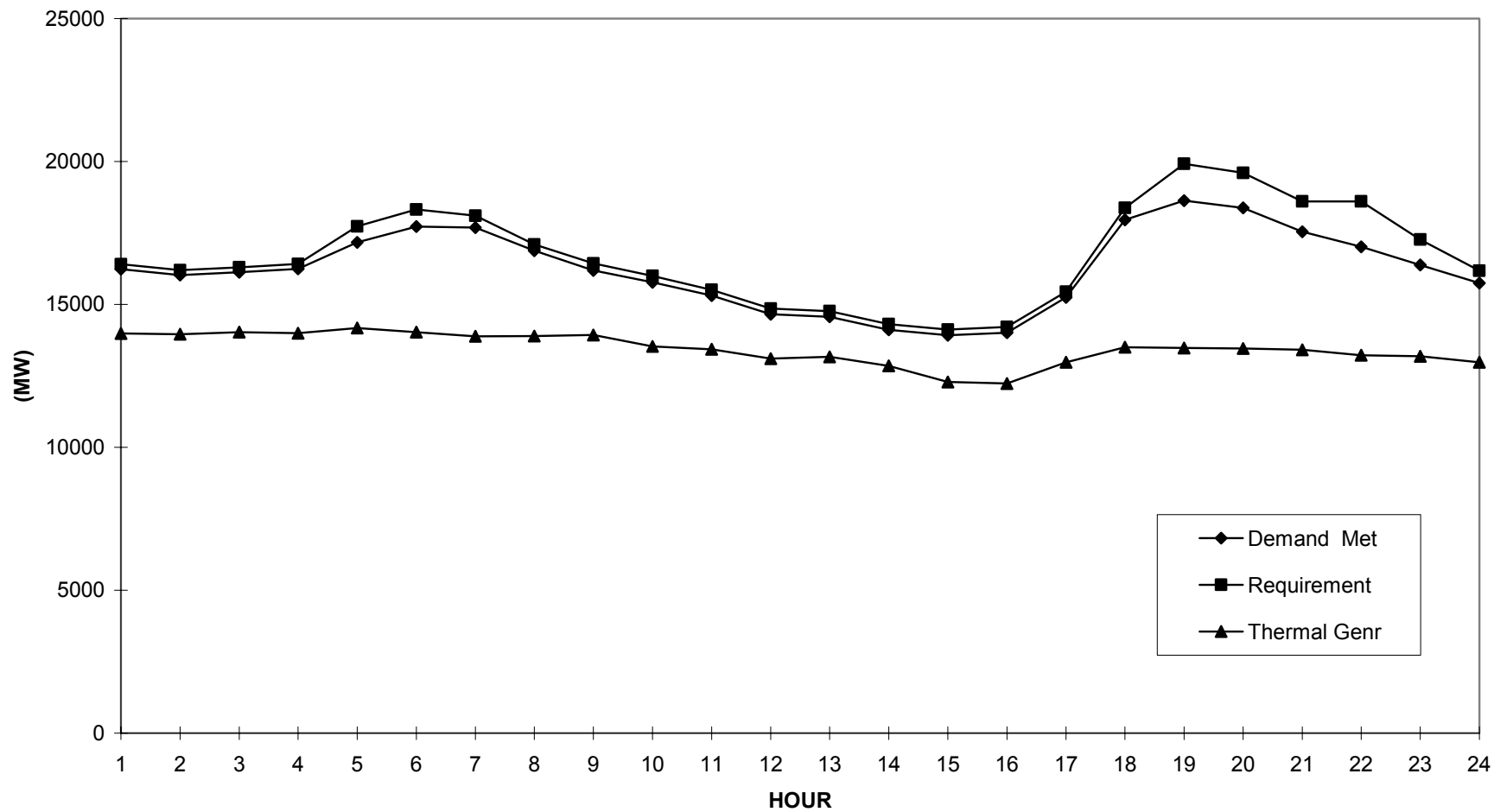
FREQUENCY DURATION CURVE OF NORTHERN REGION FOR NOVEMBER 2001



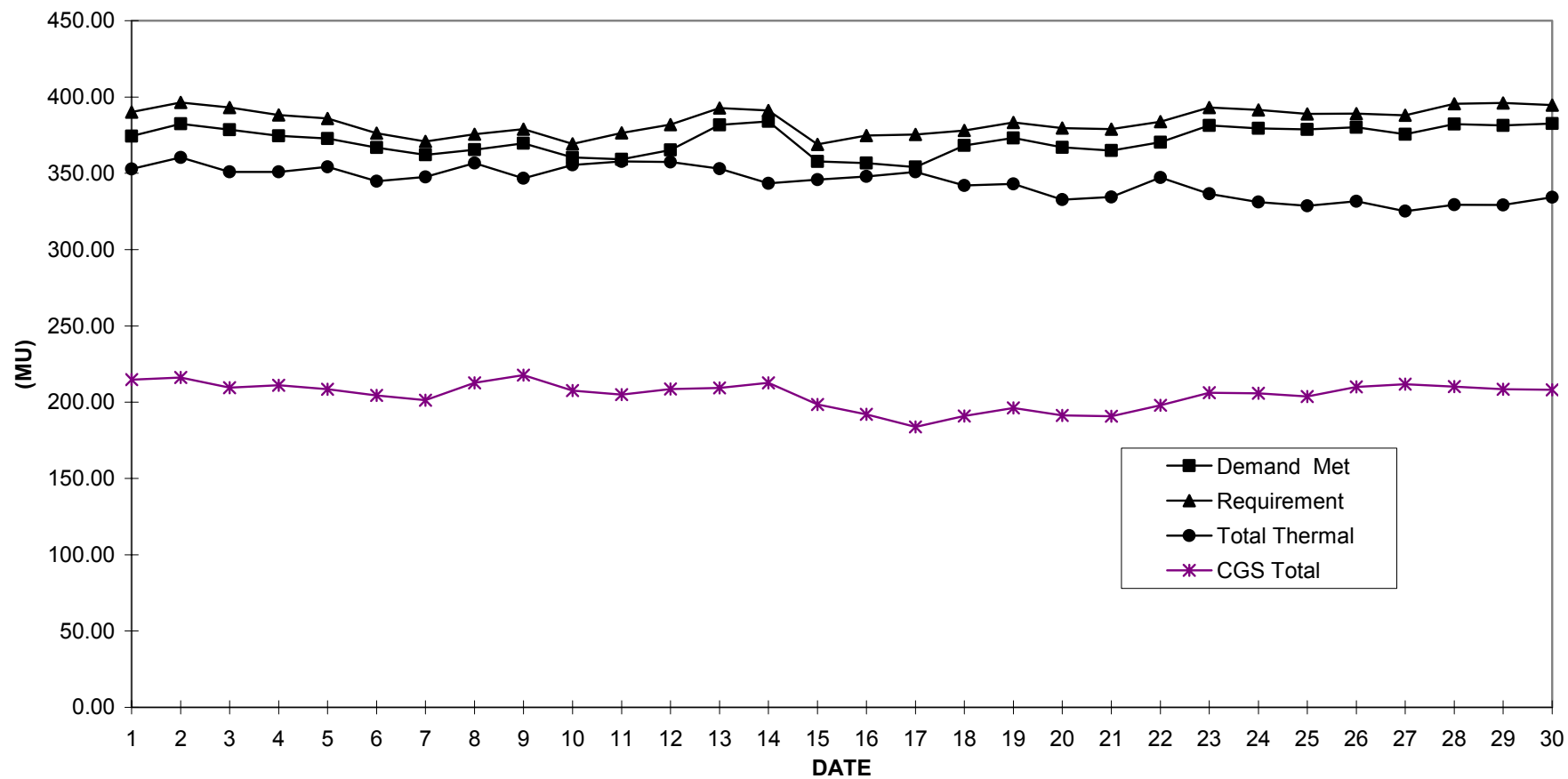
LOAD CURVE OF NORTHERN REGION FOR MAXIMUM DEMAND MET DAY (14.11.2001)



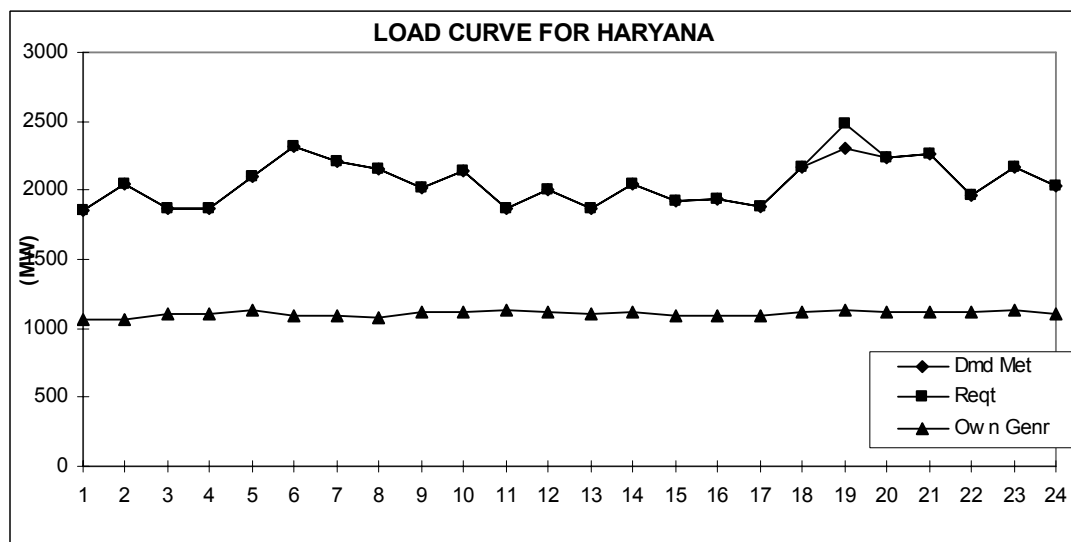
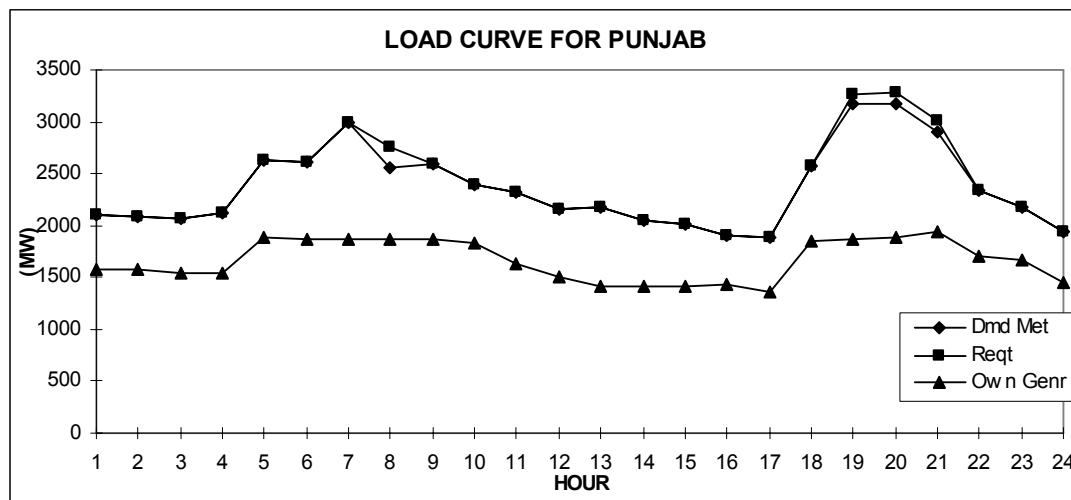
LOAD CURVE OF NORTHERN REGION FOR MINIMUM DEMAND MET DAY (15.11.2001)

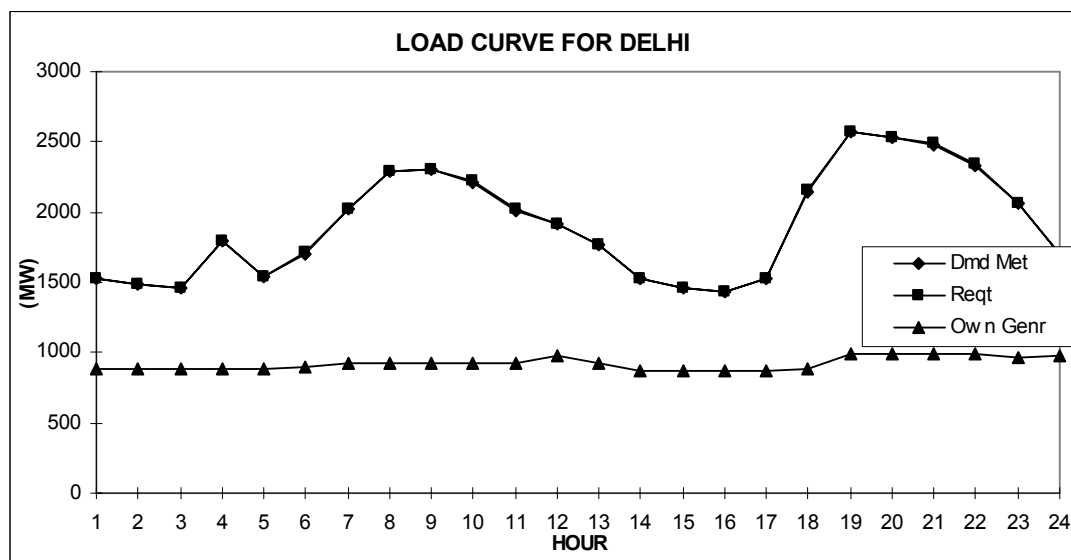
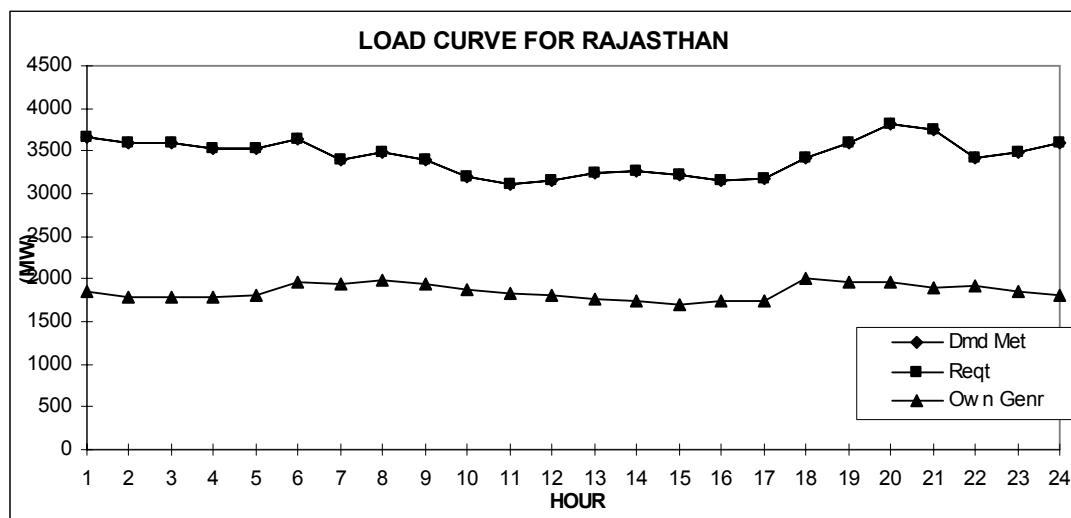


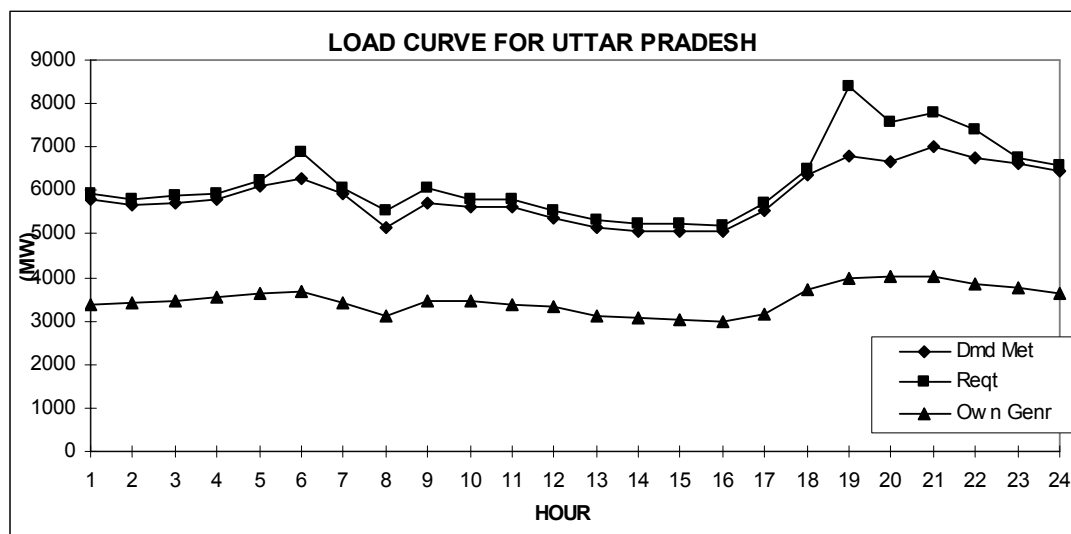
DAYWISE DEMAND MET AND REQUIREMENT (In MU) OF NORTHERN REGION DURING NOVEMBER 2001



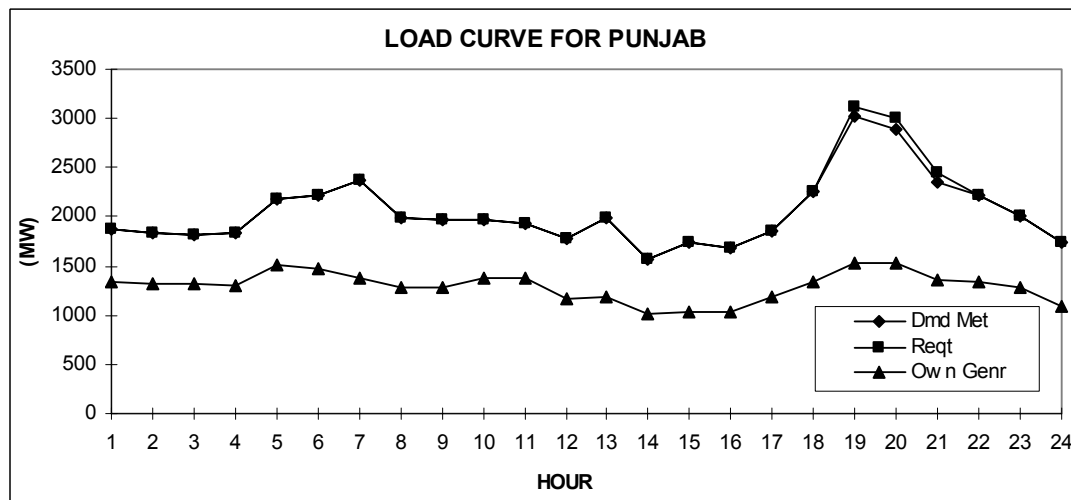
STATE LOAD CURVES FOR REGIONAL MAXIMUM DEMAND MET DAY(14.11.2001)

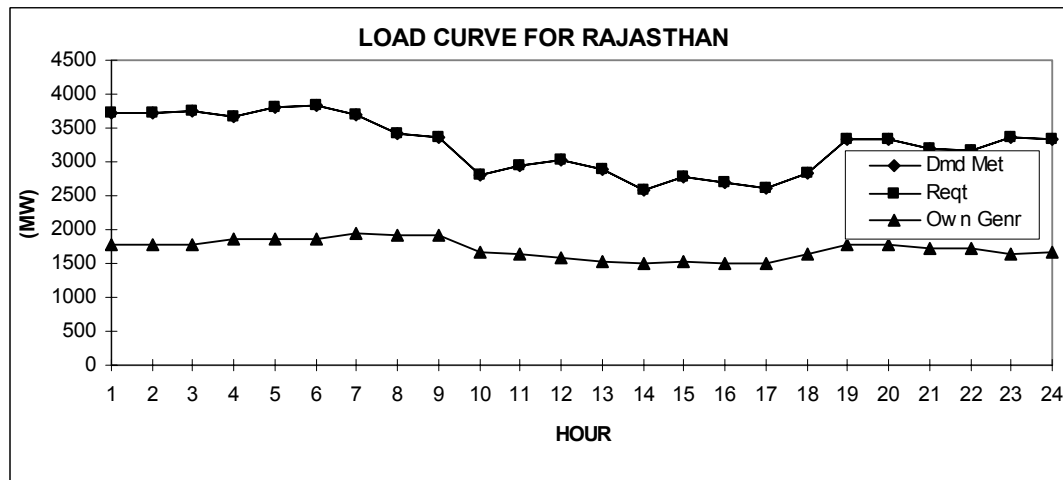
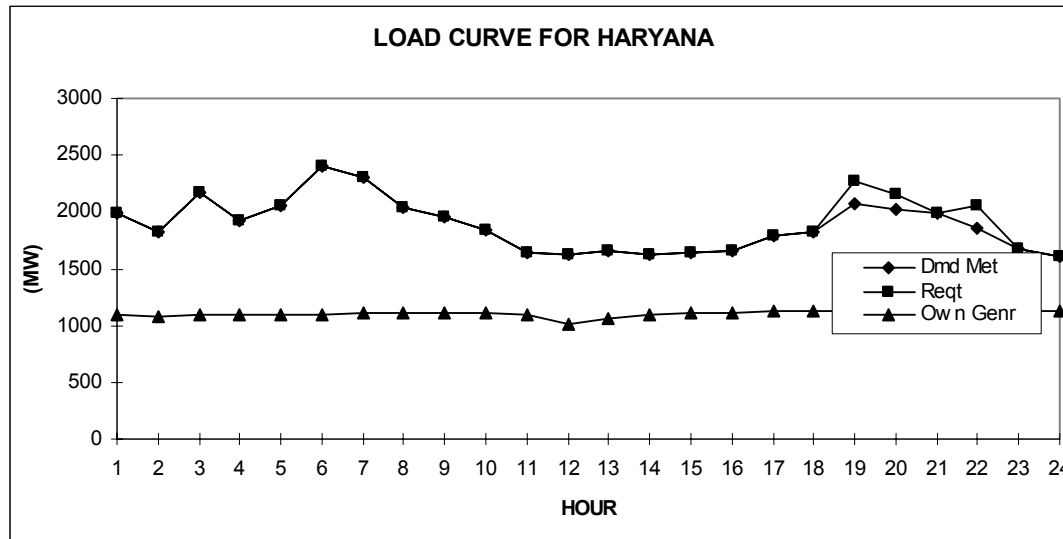


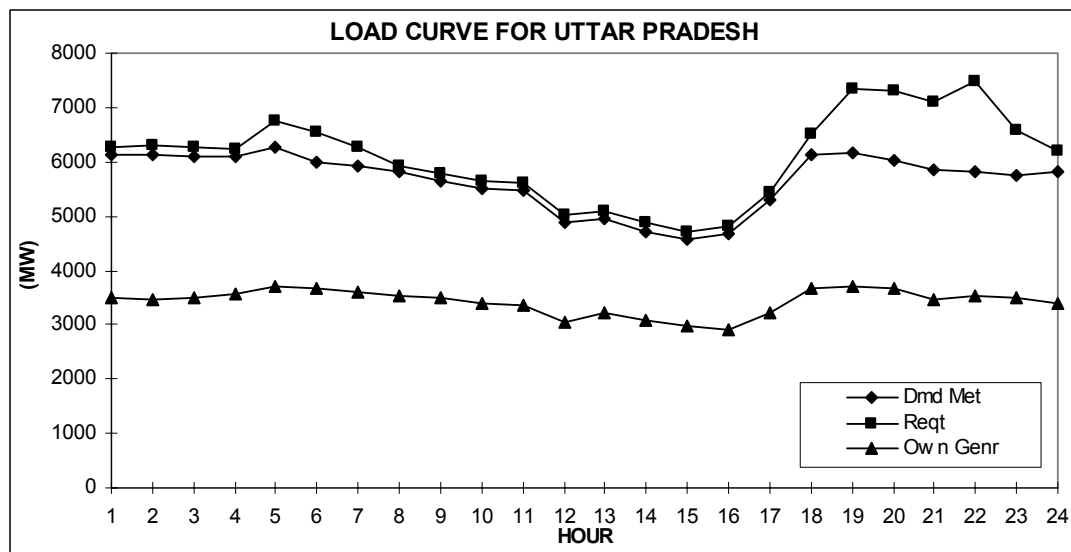
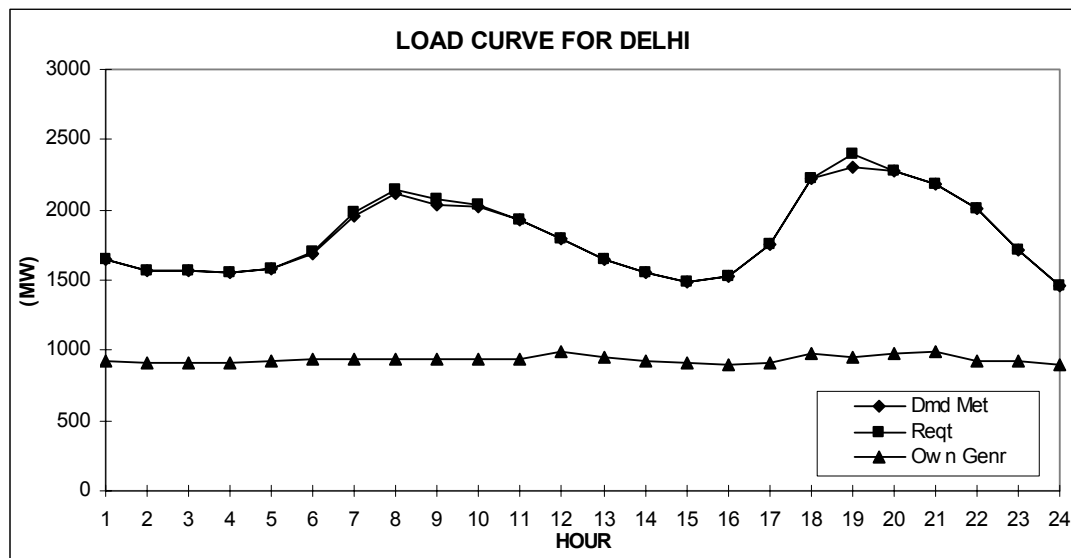




STATE LOAD CURVES FOR REGIONAL MINIMUM DEMAND MET DAY(15.11.2001)







MINOR GRID INCIDENTS DURING NOVEMBER 2001

S No.	DATE	TIME	INCIDENT
1	18.11.2001	04:29	All the 400/220 kV ICTs at Moradabad and Muradnagar substation of UPPCL tripped, which resulted in loss of load of the order of 900 MW. System frequency excused to the level of 51.20 Hz from 49.00 Hz. The incident started with breaking of 220 kV side jumper of ICT-I at Moradabad. The other ICTs tripped on overload. All the ICTs were put back into service by 05:45 hrs. except ICT-I at Moradabad which was normalized by 15:38 hrs. of 18.11.2001.