



GRID REPORT

September 2001

SYSTEM OPERATION REPORT OF NORTHERN REGION FOR THE MONTH OF SEPTEMBER, 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 September 2001, was 49.47 Hz and frequency remained between 49.0 & 50.5 Hz for 75.62 % of time. The system voltage condition was satisfactory during the month and was well within the prescribed limits.

There was no transmission constraint during the month except on few occasions when generation backing down had to be done in Singrauli STPS due to tripping of Rihand-Dadri HVDC Pole-I & II and in Tanakpur HEP due to tripping of 220 kV Tanakpur-Bareilly D/C.

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

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

NIL

(d) All time high availability of 21586 MW achieved in Northern Region on 11th September 2001.

II. CENTRAL GENERATING STATIONS SHARE vs DRAWAL OF ALL CONSTITUENTS DURING SEPTEMBER 2001(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	40.55	36.60	9.89	9.89	3.94	2.97	47.35	47.54	101.73	97.00
2	Delhi	862.00	872.45	77.42	77.41	43.94	42.99	0.00	0.00	983.35	992.85
3	Haryana	370.84	403.16	100.72	100.73	36.87	89.92	300.15	303.08	808.57	896.88
4	H.P.	63.44	64.90	36.09	36.09	7.39	9.56	22.13	22.32	129.05	132.86
5	J & K	152.37	172.68	163.42	163.41	23.99	49.18	0.00	0.00	339.78	385.26
6	Punjab	409.12	396.71	147.55	147.54	56.62	32.65	430.75	434.78	1044.03	1011.68
7	Rajasthan	380.12	430.05	64.65	64.64	241.19	185.71	275.60	276.93	961.55	957.35
8	U.P.	1474.67	1411.91	87.68	87.69	86.10	87.05	0.00	0.00	1648.45	1586.65
9	MP / N.F.F.	9.39	15.44	0.00	0.00	0.00	0.00	14.40	5.75	23.79	21.19
10	Bihar	0.00	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
11	Trans. Losses	94.62	94.61	13.40	13.40	8.23	8.23	54.94	54.94	171.19	171.18
12	Others	65.34	22.76	0.00	0.00	0.00	0.00	0.00	0.00	65.34	22.76
	Total	3922.44	3922.44	700.80	700.80	508.26	508.26	1145.32	1145.32	6276.82	6276.82

III. INTER REGIONAL EXCHANGES IN MU AND PEAK MW

	Energy (MU)	Peak MW
a. Import over HVDC Back to Back at Vindhyachal	23.84	450
b. M.P. to Rajasthan(Ujjain - Kota)	0.00	0
c. Eastern region to Northern region (Import)	140.32	265
d. Export over HVDC Back to Back at Vindhyachal	24.15	500
e. 220 KV Auraiya -Malanpur	13.99	24
f. Northern region to Bihar (Export)	1.04	10
g. Tanakpur to Mahendranagar(NEPAL) (Export)	3.93	11

IV. FREQUENCY PROFILE

a. Maximum frequency	51.20	Hz	at	15:59 hours on	14.09.01
Minimum frequency	48.16	Hz	at	18:25 hours on	17.09.01
Average frequency	49.47	Hz			

b. Frequency distribution in %

Hz	< 48.0	48.0-49.0	49.0-49.5	49.5-50.5	50.5-51.0	> 51.0
%	0.00	21.33	29.93	45.69	2.92	0.13

c. Frequency Variation Index

Monthly Average	6.08
Maximum	13.04
Minimum	1.47

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	3.23	3.23	0.00	0.00
Delhi	56.29	58.19	1.90	3.27
Haryana	55.15	57.40	2.25	3.92
H.P.	8.69	8.69	0.00	0.00
J & K	13.84	15.94	2.10	13.17
Punjab	86.29	91.43	5.14	5.62
Rajasthan	65.96	66.50	0.54	0.81
U.P.	124.17	137.77	13.60	9.87
N.F.F./Rail	0.95	0.95	0.00	0.00
Total	414.57	440.10	25.53	5.80

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	169	169	0	0	0.00	0.00
Delhi	2787	2989	202	267	6.76	8.93
Haryana	2828	2914	86	86	2.95	2.95
H.P. *	472	472	0	0	0.00	0.00
J & K *	839	1042	203	275	19.48	26.39
Punjab	4645	4979	334	334	6.71	6.71
Rajasthan	3195	3314	119	250	3.59	7.54
U.P.	6341	7584	1243	1736	16.39	22.89
N.F.F./Rail	57	57	0	0	0.00	0.00
Region	21586	22589	1003	2407	4.44	10.66

Diversity Factor = 1.03

* Approximate and Estimated

B. DETAILED REPORT

I. 1. INSTALLED / EFFECTIVE CAPACITY AT THE END OF SEPTEMBER 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	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

(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 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	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		0.00
(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 SEPTEMBER 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.	$5 \times 23 = 115$
Rana Pratap Sagar	Rajasthan	$4 \times 43 = 172$
Jawahar Sagar	Rajasthan	$3 \times 33 = \underline{99}$
	Total	386

Rajasthan has 50 % share in these Chambal projects viz. 193 MW.

SATPURA

PROJECTS	LOCATED	INSTALLED CAPACITY (MW)
Satpura TPS	M.P.	$5 \times 62.5 + 200.0 + 3 \times 210.0 = 1142.50$

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 30.09.2001

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	
	September 2001	September 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	September 2001			September 2000			Percentage increase over 2000	
	Energy(MU/day)			Energy(MU/day)				
	Demand met	Reqd.	%Shortage	Demand met	Reqd.	%Shortage	Demand met	Reqd.
Chandigarh	3.23	3.23	0.00	3.10	3.10	0.00	4.19	4.19
Delhi	56.29	58.19	3.27	52.75	55.65	5.21	6.71	4.56
Haryana	55.15	57.40	3.92	49.99	50.92	1.83	10.32	12.73
HP	8.69	8.69	0.00	8.37	8.37	0.00	3.82	3.82
J&K	13.84	15.94	13.17	13.97	15.45	9.58	-0.93	3.17
Punjab	86.29	91.43	5.62	80.06	87.19	8.18	7.78	4.86
Rajasthan	65.96	66.50	0.81	62.25	64.57	3.59	5.96	2.99
UP	124.17	137.77	9.87	105.32	121.08	13.02	17.90	13.78
NFF/Rail	0.95	0.95	0.00	0.16	0.16	0.00	493.75	493.75
REGION	414.57	440.10	5.80	375.97	406.49	7.51	10.27	8.27
Frequency Regime								
		September 2001	September 2000					
Average (Hz)		49.47	49.08					

Above 50.5 Hz (%)	3.05	5.34
Above 50.2 Hz (%)	13.10	10.22
Below 49.5 Hz (%)	51.26	70.66
Below 49.0 Hz (%)	21.33	50.91
Below 48.5 Hz (%)	3.65	26.83

3. Peak Power Supply Position

Off Peak Power Supply Position

State/UT	September 2001			September 2000			Percentage increase over 2000	
	Peak (MW)			Peak (MW)				
	Demand met	Reqt.	%Shortage	Demand met	Reqt.	%Shortage	Demand met	Reqt.
Chandigarh	169	169	0.00	170	170	0.00	-0.59	-0.59
Delhi	2787	2989	6.76	2577	2877	10.43	8.15	3.89
Haryana	2828	2914	2.95	2632	2697	2.41	7.45	8.05
HP	472	472	0.00	576	576	0.00	-18.06	-18.06
J&K	839	1042	19.48	937	1024	8.50	-10.46	1.76
Punjab	4645	4979	6.71	4408	4877	9.62	5.38	2.09
Rajasthan	3195	3314	3.59	3165	3365	5.94	0.95	-1.52
UP	6341	7584	16.39	5595	6402	12.61	13.33	18.46
NFF/Rail	57	57	0.00	8	8	0.00	612.50	612.50
REGION	21586	22589	4.44	18765	21087	11.01	15.03	7.12

III. FREQUENCY PROFILE DURING SEPTEMBER 2001

DATE	Average	MAX.		MIN.		Std dev	Frequency
	Hz	Hz	Time	Hz	Time	Hz	Var. Index(FVI)
1	49.41	50.64	11.07	48.36	19.23	0.43	5.33
2	49.98	51.00	18.31	48.72	22.38	0.43	1.87
3	49.76	50.84	8.17	48.32	12.04	0.48	2.88
4	49.36	50.84	18.04	48.24	12.08	0.52	6.85
5	49.77	50.80	19.06	48.48	5.46	0.45	2.58
6	49.51	50.96	7.43	48.28	19.07	0.47	4.63

7	49.47	50.64	8.53	48.24	5.38	0.46	4.87
8	49.42	51.08	18.06	48.24	12.41	0.49	5.67
9	49.41	50.84	18.08	48.28	0.48	0.53	6.26
10	49.64	50.72	12.45	48.20	22.34	0.53	4.14
11	49.88	51.04	12.05	48.60	22.44	0.42	1.93
12	49.59	50.92	11.14	48.44	22.39	0.51	4.24
13	49.37	50.72	8.04	48.24	19.20	0.42	5.72
14	49.97	51.20	15.59	48.64	1.08	0.57	3.21
15	50.06	50.96	7.41	48.56	18.48	0.41	1.74
16	50.10	50.92	8.14	48.92	23.06	0.37	1.47
17	49.85	50.72	7.54	48.16	18.25	0.36	1.55
18	49.46	50.44	7.28	48.28	12.30	0.44	4.90
19	49.43	50.56	8.09	48.24	19.12	0.43	5.19
20	49.23	50.60	6.02	48.20	16.33	0.48	8.27
21	49.05	50.44	7.20	48.20	6.50	0.46	11.27
22	49.49	50.60	7.06	48.24	10.06	0.49	5.05
23	49.38	50.88	6.09	48.24	11.41	0.52	6.55
24	48.97	50.80	18.04	48.16	19.24	0.49	12.95
25	49.02	50.84	13.02	48.16	18.15	0.47	11.87
26	49.12	50.44	9.40	48.20	5.07	0.49	10.14
27	49.02	50.52	8.10	48.16	10.04	0.46	11.66
28	48.96	50.36	7.08	48.16	0.36	0.47	13.04
29	49.01	50.44	13.11	48.16	11.01	0.45	11.77
30	49.48	50.76	18.03	48.24	22.13	0.46	4.87
Monthly	49.47	51.20		48.16		0.57	6.08

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 SEPTEMBER 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	411	384	412	368	420	383	410	385	210	179
2	411	389	410	372	420	383	410	373	210	191
3	410	386	408	372	416	383	408	385	209	182
4	411	391	408	382	416	392	405	390	209	188
5	404	384	402	374	414	383	407	384	207	179
6	410	395	410	378	416	387	410	391	210	185
7	406	380	406	372	416	383	410	388	208	182
8	408	380	408	372	416	385	410	385	210	189
9	410	395	410	380	418	392	412	379	209	194
10	400	377	406	358	416	378	410	381	209	177
11	408	384	402	364	416	378	409	376	209	183
12	410	389	408	378	414	387	412	385	208	180
13	411	382	408	368	414	376	411	378	208	180
14	415	388	410	374	416	383	414	384	210	186
15	410	389	410	384	418	392	408	390	213	195
16	410	391	408	384	416	394	409	388	212	198
17	410	382	408	386	416	394	404	388	212	194
18	410	382	410	378	416	385	411	386	212	180
19	411	384	408	376	416	383	412	383	212	186
20	410	386	410	376	416	385	412	387	212	185
21	417	384	408	374	411	383	411	384	212	185
22	404	386	406	378	414	385	412	379	212	191
23	411	395	408	384	418	392	414	386	213	197
24	411	384	410	382	416	385	415	386	209	192
25	413	391	412	382	414	385	409	387	212	184
26	417	393	416	386	420	389	412	386	212	190
27	417	389	410	382	418	387	411	386	213	192
28	415	380	410	372	416	376	408	381	212	189
29	410	386	408	378	418	385	409	383	212	192
30	411	393	408	376	418	389	406	381	207	201
Month	417	377	416	358	420	376	415	373	213	177

V. PERFORMANCE OF GENERATING STATIONS DURING SEPTEMBER 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	477.75	435.24	2695.26	2444.89
(b)	Singrauli STPS	2000.00	1263.86	1183.33	7224.52	6726.87
(c)	Rihand STPS	1000.00	448.10	413.01	3705.90	3405.69
(d)	Dadri NCTPS	840.00	553.96	510.72	3233.23	2966.73
(e)	Unchahar-I TPS	420.00	251.04	228.47	1525.25	1379.68
(f)	Unchahar-II TPS	420.00	294.25	267.46	1641.33	1480.87
(g)	Tanda TPS	440.00	201.96	176.72	858.04	750.80
(h)	Anta GPS	419.33	247.37	240.12	1558.46	1523.52
(i)	Auraiya GPS	663.36	417.86	411.96	2554.96	2519.80
(j)	Dadri GPS	829.78	539.21	526.60	2909.90	2829.95
(k)	Faridabad GPS	431.57	265.22	258.92	1496.25	1457.33
	Total NTPC	8169.04	4960.57	4652.55	29403.10	27486.13
B	NHPC					
(a)	Bairasiul	180.00	40.86	38.95	427.00	412.32
(b)	Salal	690.00	329.01	327.33	2283.66	2264.46
(c)	Tanakpur HPS	94.20	62.36	62.05	285.69	282.58
(d)	Chamera HPS	540.00	157.96	157.53	1549.67	1546.63
(e)	Uri HPS	480.00	120.26	118.86	1280.81	1267.63
	Total NHPC	1984.20	710.45	704.72	5826.84	5773.62
C	NPC					
(a)	RAPS -A	300.00	89.54	81.95	672.66	614.43
(b)	RAPS -B	440.00	296.52	270.16	1372.51	1240.21
(c)	NAPS	440.00	268.63	241.69	1496.16	1342.93
	Total NPC	1180.00	654.69	593.80	3541.33	3197.57

2 JOINTLY OWNED (BBMB)						
(a)	Bhakra Complex	1465.15	583.93	581.41	2756.83	2742.97
(b)	Dehar	990.00	345.35	345.35	2177.45	2171.51
(c)	Pong	366.00	218.56	218.56	580.26	576.30
	Total BBMB	2821.15	1147.84	1145.32	5514.54	5490.78
3 DELHI						
(a)	Indra Prastha	247.50	75.90	66.79	421.62	371.02
(b)	Rajghat	149.00	46.62	41.49	233.09	207.45
(c)	Gas Turbines	282.00	94.27	91.44	648.01	628.57
	Total DELHI	678.50	216.79	199.72	1302.72	1207.04
4 HARYANA						
(a)	WYC	48.00	28.83	28.54	125.69	124.44
(b)	Faridabad (New)	165.00	82.57	71.42	387.40	335.10
(c)	Panipat	860.00	407.62	358.70	1912.45	1682.96
(d)	Magnum Diesel(IPP)	25.20	10.50	10.40	43.76	43.43
	Total Haryana	1098.20	529.51	469.06	2469.31	2185.92
5 HP						
(a)	Giri	60.00	17.73	17.65	134.12	133.58
(b)	Bassi	60.00	21.55	21.51	195.39	194.78
(c)	Binwa	6.00	0.95	0.94	10.72	10.66
(d)	Rongtong (+Nogli+Micro+Thirot+Sal-2)	15.02	2.66	2.63	14.08	13.91
(e)	Andhra	16.95	6.82	6.80	43.48	43.31
(f)	Bhabha (H)	120.00	61.39	61.30	350.32	349.61
(g)	Baner (H)	12.00	2.91	2.91	22.02	21.96
(h)	Gaj (H)	10.50	4.44	4.43	29.53	29.37
(i)	Gumma	3.00	0.84	0.84	5.26	5.22
(j)	Ghanvi	22.50	2.87	2.86	17.65	17.58
(k)	Malana (IPP)	86.00	29.54	29.54	131.55	131.55
	Total HP	411.97	151.69	151.39	954.14	951.54
6 J & K						
(a)	Lower Jhelum	105.00	23.46	23.22	209.70	207.60

(b)	Upper Sindh	57.60	13.21	13.07	120.94	119.73
(c)	Ganderbal	15.00	2.94	2.91	14.94	14.79
(d)	Mohra	9.00	0.00	0.00	0.00	0.00
(e)	Chenani	25.30	4.97	4.92	45.21	44.76
(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	44.58	44.13	390.79	386.88
7	PUNJAB					
(a)	Jogindernagar/ Shanan	110.00	37.97	37.96	361.00	359.47
(b)	UBDC	90.00	31.01	30.91	212.17	210.89
(c)	Mukerian	207.00	144.26	143.97	516.96	514.48
(d)	Anandpur Sahib (APS)	134.00	68.14	68.06	312.61	311.19
(e)	Ranjit Sagar HPS	600.00	100.84	100.65	887.35	885.08
(f)	Small Hydel	4.10	0.97	0.96	4.77	4.73
(g)	GNDTPS (Bhatinda)	440.00	229.72	207.13	1457.57	1316.52
(h)	GGSTPS (Ropar)	1260.00	772.61	713.12	4499.52	4126.30
(i)	Jhalkeri Rice Straw Fired	10.00	0.00	0.00	0.00	0.00
(j)	Lehra Mohabbat TPS	420.00	293.86	267.75	1603.79	1455.41
	Total Punjab	3275.10	1679.39	1570.49	9855.73	9184.06
8	RAJASTHAN					
(a)	Mahi Bajaj Sagar	140.00	4.08	4.08	4.08	4.08
(b)	Rana Pratap Sagar (RPS)	172.00	31.23	31.17	45.77	45.60
(c)	Jawahar Sagar (JS)	99.00	20.02	19.97	56.86	56.68
(d)	Anoopgarh	9.00	0.15	0.15	0.25	0.25
(e)	Small Hydro	14.32	0.33	0.33	1.96	1.96
(f)	Kota TPS	850.00	607.81	551.03	2999.18	2706.42
(g)	RAMGARH GT	3.00				
(h)	RAMGARH GT EXT	35.50	20.58	20.58	100.59	100.59
(i)	Suratgarh TPS	500.00	347.02	316.38	1744.35	1581.93

(j)	Wind Farm	4.00	1.36	1.36	2.03	2.03
	Total Rajasthan	1826.82	1032.58	945.05	4955.08	4499.56
9	U.P.					
	<u>HYDRO</u>					
(a)	Rihand	300.00	113.50	112.37	470.21	465.51
(b)	Obra	99.00	45.15	44.70	189.35	187.45
(c)	Matatilla	30.00	19.40	19.21	59.45	58.85
(d)	Khatima	41.40	19.43	19.23	106.38	105.32
(e)	Ramganga	198.00	0.00	0.00	103.24	102.21
(f)	Ganga Canal	43.40	12.92	12.79	85.10	84.25
(g)	Yamuna (I & IV)	114.75	61.22	60.61	308.62	305.53
(h)	Chibro	240.00	76.33	75.57	510.18	505.08
(i)	Khodri	120.00	36.63	36.27	242.63	240.20
(j)	Chilla	144.00	63.09	62.46	343.91	340.47
(k)	Maneri Bhali	90.00	34.90	34.55	170.54	168.83
(l)	Khara	72.00	41.54	41.13	216.47	214.31
	Total U.P. (Hydro)	1492.55	524.13	518.89	2806.08	2778.02
	<u>THERMAL</u>					
(m)	Obra	160.00	17.07	14.94	94.74	82.90
(n)	Obra Extn. - I	282.00	60.07	52.56	271.17	237.27
(o)	Obra Extn. - II	1000.00	400.27	350.24	2172.11	1900.60
(p)	Panki	32.00				
(q)	Panki Extn.	210.00	88.12	77.10	558.94	489.07
(r)	Harduaganj - A	0.00				
(s)	Harduaganj - B	150.00				
(t)	Harduaganj - C	225.00	37.78	33.05	251.91	220.42
(u)	Paricha	220.00	102.79	89.94	457.54	400.35
(v)	Anpara - A	630.00	329.97	288.72	2070.49	1811.68

(w)	Anpara - B	1000.00	673.06	588.93	3858.87	3376.51
	Total U.P. (Thermal)	3909.00	1786.98	1563.61	9735.77	8518.80
	Total U.P.	5401.55	2311.11	2082.50	12541.85	11296.82
	Total Region	27246.72	13439.19	12558.73	76755.41	71659.92

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 SEPTEMBER 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	6.43	6.43	6.29	5.08	0.00	0.12	0.00
2	Delhi	127.31	127.31	55.99	56.52	435.24	1.64	0.00
3	Haryana	146.97	146.97	50.39	50.78	0.00	1.17	0.00
4	H.P.	0.00	0.00	14.20	13.92	0.00	0.35	0.00
5	J & K	7.52	7.52	30.86	31.36	0.00	1.51	0.00
6	Punjab	130.51	130.51	51.15	49.46	0.00	1.78	0.00
7	Rajasthan	204.70	204.70	27.39	27.95	0.00	1.69	0.00
8	U.P.	499.16	499.16	162.66	163.88	0.00	3.73	0.00
9	MP	0.00	0.00	0.00	0.00	0.00	9.39	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	39.43	39.43	14.07	14.07	0.00	0.40	0.00
	TOTAL	1162.03	1162.03	413.00	413.00	435.24	21.79	0.00

Note :- Singrauli sentout excludes 21.3096187177154 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	0.01	1.43	1.03	3.53	1.27
2	Delhi	450.05	448.47	13.03	13.32	25.64	31.12
3	Haryana	5.65	4.81	10.39	10.60	25.25	53.71
4	H.P.	0.00	0.03	2.91	2.61	7.77	8.57
5	J & K	0.00	0.11	6.54	6.80	21.13	35.24
6	Punjab	0.00	0.14	16.85	15.98	41.27	25.07
7	Rajasthan	0.00	0.13	2.82	3.12	8.98	51.95
8	U.P.	55.01	51.00	166.71	167.21	124.80	51.46

9	MP	0.00	5.05	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	0.97	0.00	0.00	0.00	0.00
12	Trans. Losses	0.00	0.00	7.80	7.80	9.08	9.08
	Total	510.71	510.71	228.48	228.48	267.46	267.46
Sl. No.	State/UT/ System	Anta GPS		Auraiya GPS		Uri HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	4.04	4.01	5.27	5.08	0.72	0.72
2	Delhi	32.88	32.89	56.09	55.95	12.89	12.89
3	Haryana	20.28	20.29	36.44	36.34	6.29	6.29
4	H.P.	8.25	8.25	13.43	13.40	3.03	3.03
5	J & K	17.72	17.72	29.75	29.68	39.55	39.55
6	Punjab	30.50	30.51	56.57	56.42	15.96	15.96
7	Rajasthan	49.98	49.98	35.53	35.47	10.67	10.67
8	U.P.	66.85	66.86	164.65	164.20	28.58	28.58
9	MP	0.00	0.00	0.00	1.00	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	0.19	0.00	0.00
12	Trans. Losses	9.60	9.60	14.23	14.23	1.19	1.19
	TOTAL	240.10	240.10	411.96	411.96	118.86	118.86
Sl. No.	State/UT/ System	Dadri GPS		Bairasiul HPS		Salal HPS	
		Entitlement	Actual	Entitlement	Actual	Entitlement	Actual
1	Chandigarh	4.02	4.16	0.00	0.00	0.87	0.87
2	Delhi	55.25	61.11	4.11	4.11	37.45	37.45
3	Haryana	36.51	40.71	11.41	11.41	48.40	48.40
4	H.P.	16.53	17.78	4.49	4.49	3.19	3.19
5	J & K	37.34	42.73	0.00	0.00	112.63	112.63
6	Punjab	80.48	86.86	17.39	17.39	85.72	85.72
7	Rajasthan	39.61	45.65	0.00	0.00	9.51	9.51
8	U.P.	191.50	204.82	0.00	0.00	26.30	26.30

9	MP	0.00	0.00	0.00	0.00	0.00	0.00	
10	Railways	65.34	22.76	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	1.56	1.56	3.27	3.27	
	Total	526.58	526.58	38.96	38.96	327.34	327.34	
Sl. No.	State/UT/ System	Tanakpur HPS		Chamera HPS		RAPS -A	RAPS -B	Tanda TPS
		Entitlement	Actual	Entitlement	Actual	Actual	Entitlement	Actual
1	Chandigarh	0.83	0.83	7.47	7.47	0.00	0.00	0.11
2	Delhi	8.03	8.03	14.94	14.94	0.00	10.40	14.94
3	Haryana	4.66	4.66	29.96	29.96	0.00	15.03	64.90
4	H.P.	1.93	1.93	23.45	23.45	0.00	0.00	2.25
5	J & K	3.77	3.77	7.47	7.47	0.00	4.74	25.90
6	Punjab	9.15	9.15	19.33	19.33	0.00	25.90	2.77
7	Rajasthan	7.14	7.14	37.33	37.33	81.95	210.51	149.00
8	U.P.	20.85	20.85	11.95	11.95	0.00	0.00	6.68
9	Unallocated	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Trans. Losses	1.74	1.74	5.64	5.64	0.00	0.00	0.00
11	Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	58.10	58.10	157.54	157.54	81.95	266.57	266.57

Note :- Tanakpur sentout excludes 3.934 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	2.86	47.35	47.54	0.00	0.00	0.00	9.41
2	Delhi	33.54	28.04	0.00	0.00	0.00	0.00	0.00	44.12
3	Haryana	21.84	25.02	162.00	164.93	103.44	34.71	258.92	37.78
4	H.P.	7.39	7.30	13.85	14.04	8.28	0.00	0.00	0.00
5	J & K	19.25	23.27	0.00	0.00	0.00	0.00	0.00	0.00
6	Punjab	30.72	29.87	223.52	227.55	155.16	52.07	0.00	0.00
7	Rajasthan	30.68	36.71	88.63	89.96	64.65	122.32	0.00	9.41
8	U.P.	86.10	80.38	0.00	0.00	0.00	0.00	0.00	39.59
9	N.F.F.	0.00	0.00	14.40	5.75	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	8.23	8.23	31.66	31.66	13.82	9.47	0.00	0.00
	Total	241.69	241.69	581.41	581.41	345.35	218.56	258.92	140.32

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

VII. BILATERAL EXCHANGES IN THE NORTHERN REGION DURING SEPTEMBER 2001

	Chandigarh	Delhi	Haryana	Himachal	J & K	Punjab	Rajasthan	UP	MP	Bihar	Others
Chandigarh	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	51.200	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
Himachal	0.000	-51.200	0.000	0.000	0.000	-7.100	0.000	0.000	0.000	0.000	0.000
J & K	0.000	0.000	0.000	0.000	0.000	-14.388	0.000	0.000	0.000	0.000	0.000
Punjab	0.000	0.000	0.000	7.100	14.388	0.000	0.000	0.000	0.000	0.000	0.000
Rajasthan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UP	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
Bihar	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
Total	0.000	-51.200	0.000	58.300	14.388	-21.488	0.000	0.000	0.000	0.000	0.000

(All figs in MU'S)

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

i) Haryana's share in IP station of Delhi	17.047 MU
ii) Himachal's share in Shanan power station of Punjab	5.640 MU
iii) Himachal's share in Yamuna hydro power complex of UP	50.962 MU
iv) Maruti to Haryana	16.961 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 30.09.2001**

CONSTITUENT	REQUIREMENT AT THE END OF 2001-2002	CAPACITORS AS ON 30.09.2001	CAPACITORS ADDITION DURING		ADDITIONAL REQUIRED DURING 2001-2002
		INSTALLED	2000-2001	April 01 - Sep 01	
Chandigarh	127	96	60	3	31
Delhi	2734	2377	201	141	357
Haryana	3080	2009	368	366	1071
H.P.	335	169	46	33	166
J & K	880	147	0	0	733
Punjab	4950	4552	384	121	398
Rajasthan	3300	2362	176	5	938
U.P.	5654	4280	279	74	1374
BBMB	381	381	0	0	0
TOTAL	21441	16373	1514	743	5068

(ALL FIGS IN MVAR)

SOURCE: Minutes of 321st OCC meeting of NREB held on 12th October, 2001.

IX. HYDRAULIC DATA FOR RESERVOIRS DURING SEPTEMBER 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 September 2001 (m) (ft)	501.70 1645.99	416.98 1368.06	266.88 875.60	351.88 1154.45	385.46 1264.63
Level on last day of September 2000 (m) (ft)	501.54 1645.48	409.94 1344.96	266.06 872.90	349.25 1145.83	384.72 1262.21
Live Capacity as on (mhmt) last day of September 2001(maft)	0.52 4.22	0.50 4.06	0.50 4.05	0.14 1.12	0.08 0.63
Live Capacity as on (mhmt) last day of September 2000(maft)	0.52 4.20	0.34 2.76	0.47 3.80	0.09 0.74	0.06 0.51
Energy content as on last day of September 2001 (MU)	2080.00	750.00	975.00	260.00	250.00
Energy content as on last day of September 2000 (MU)	2050.00	490.00	920.00	167.00	190.00
Maximum level (m)	502.86	419.37	267.34	352.41	386.26

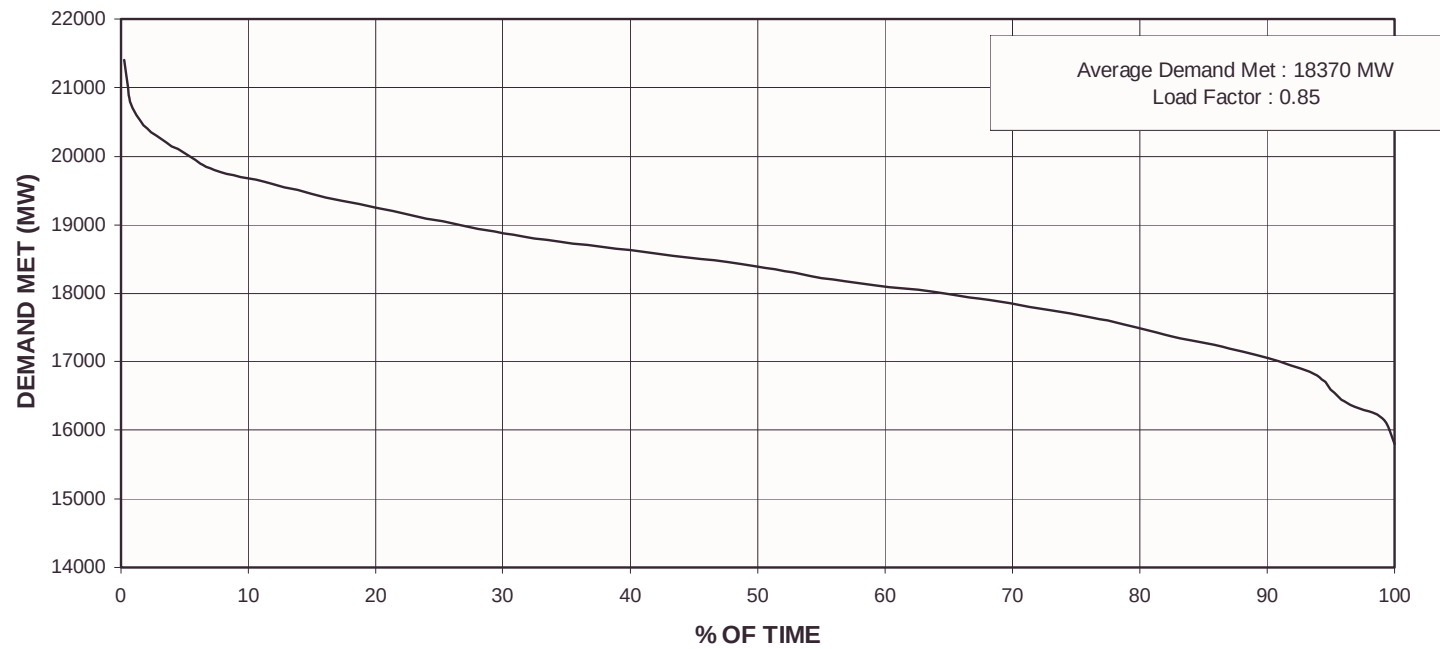
	(ft)	1649.79	1375.89	877.10	1156.19	1267.25
	(date)	15.09.2001	04.09.2001	02.09.2001	01.09.2001	01.09.2001
Minimum level	(m)	501.37	416.98	266.88	351.88	385.46
	(ft)	1644.92	1368.06	875.60	1154.45	1264.63
	(date)	01.09.2001	30.09.2001	30.09.2001	30.09.2001	30.09.2001

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

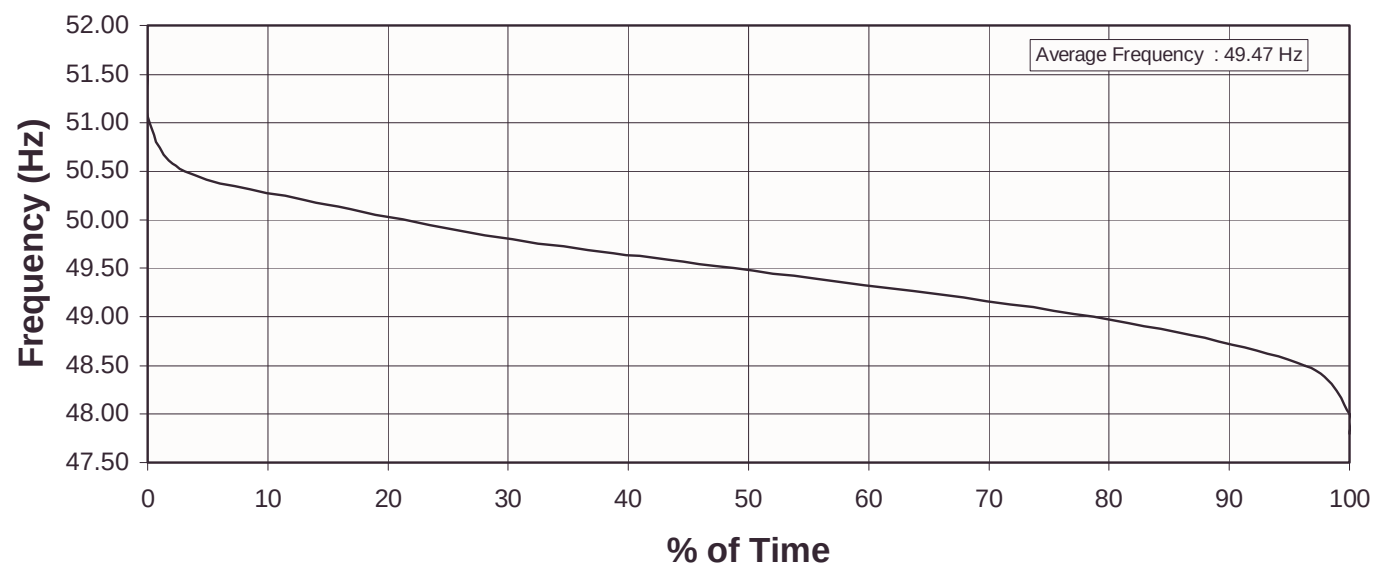
Energy content of Rihand : Total Energy content at Rihand & Obra power stations

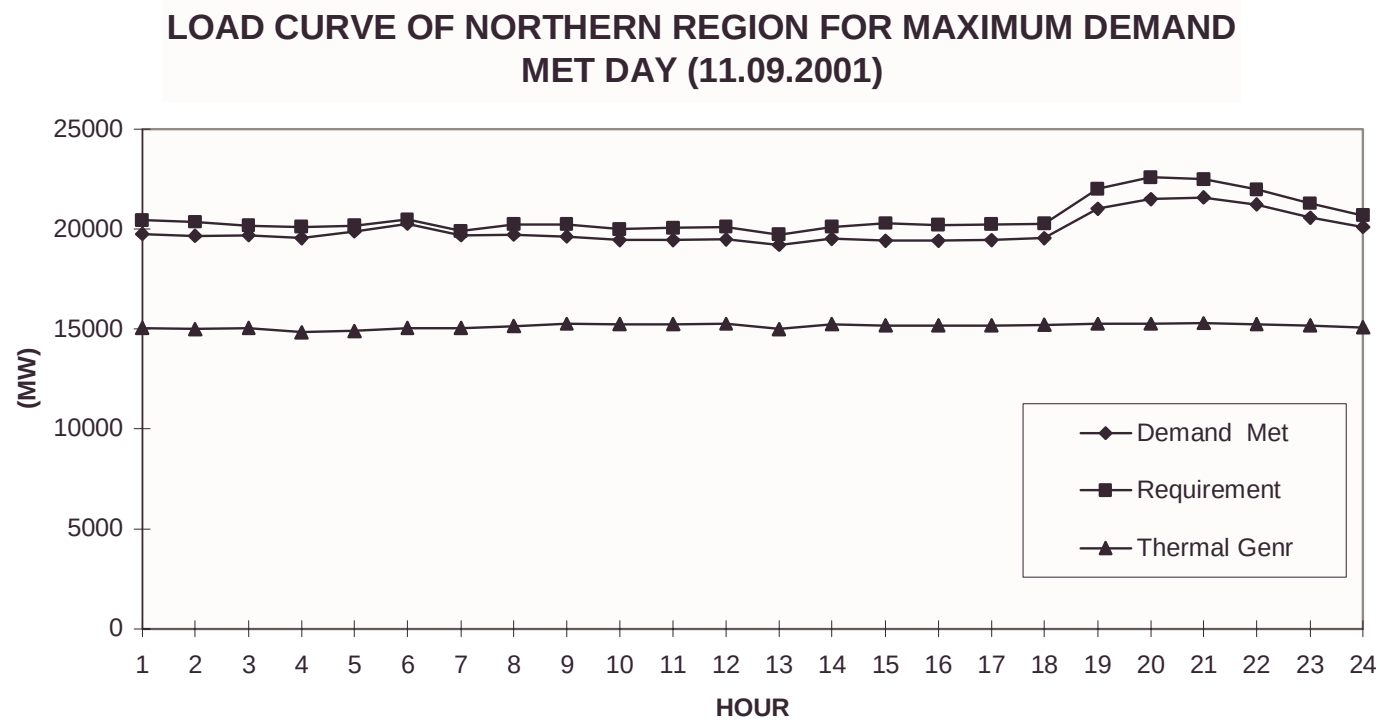
Energy content of RPS : Total Energy content of Rana Pratap Sagar and Jawahar Sagar Power Stations.

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

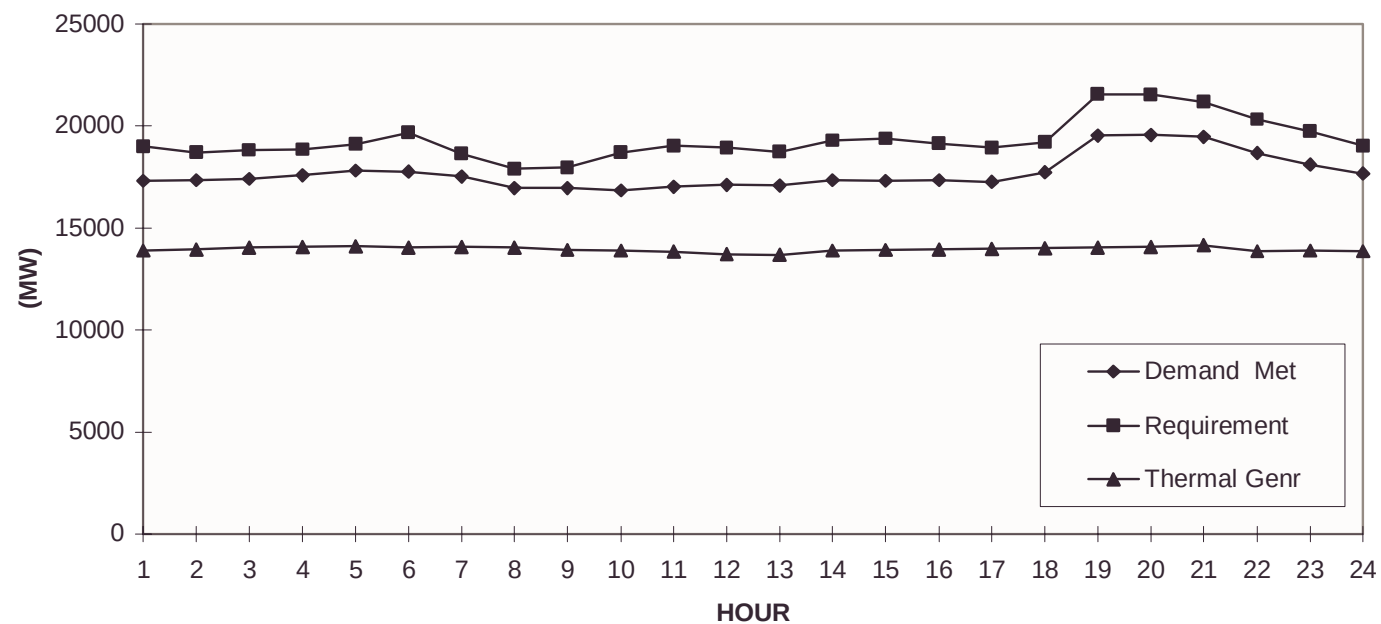
LOAD DURATION CURVE OF NORTHERN REGION FOR SEPTEMBER 2001

FREQUENCY DURATION CURVE OF NORTHERN REGION FOR SEPTEMBER 2001

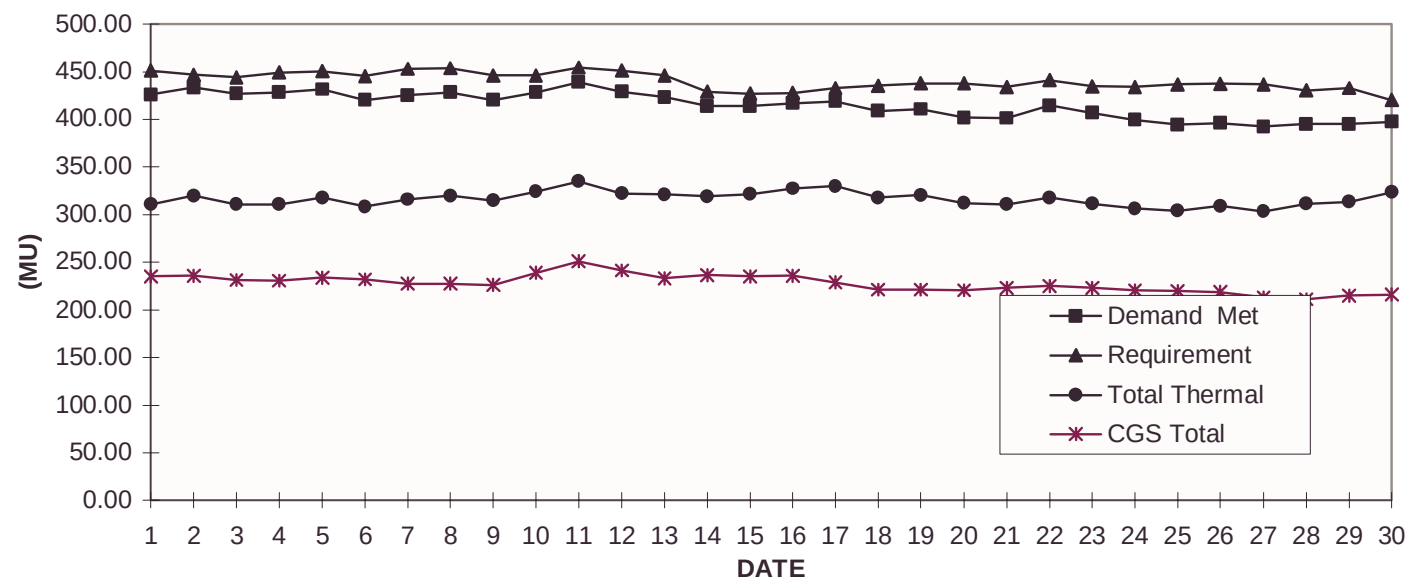




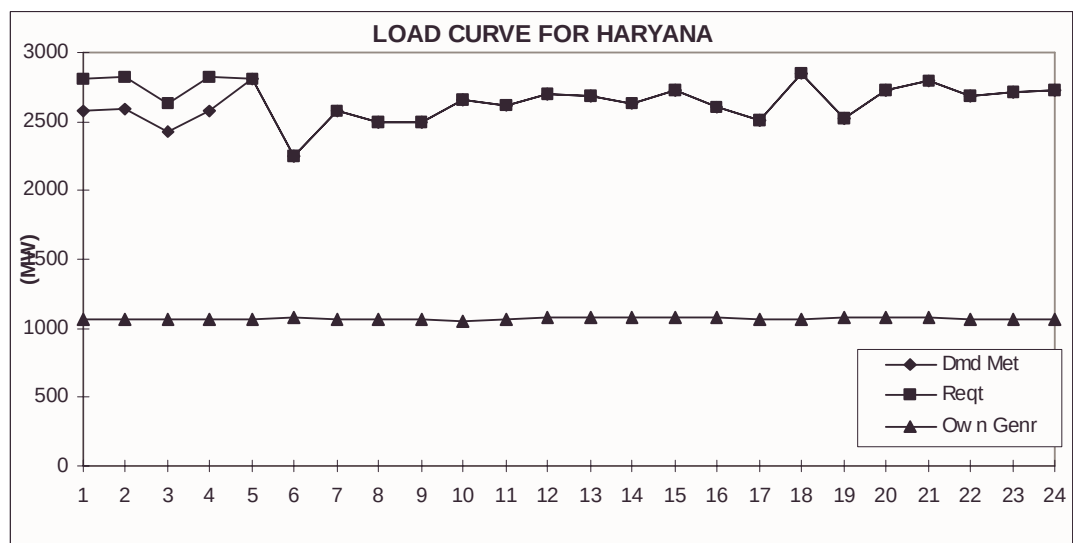
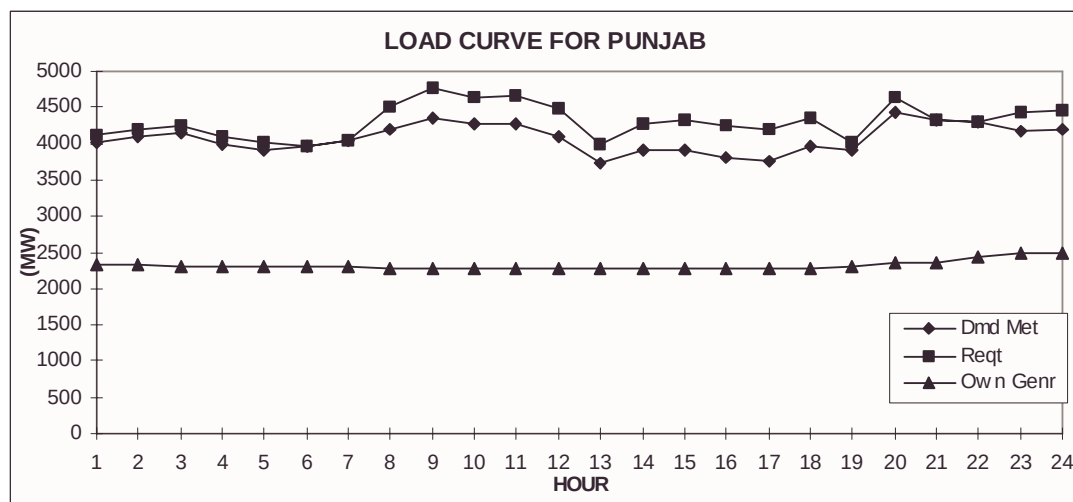
LOAD CURVE OF NORTHERN REGION FOR MINIMUM DEMAND MET DAY (26.09.2001)

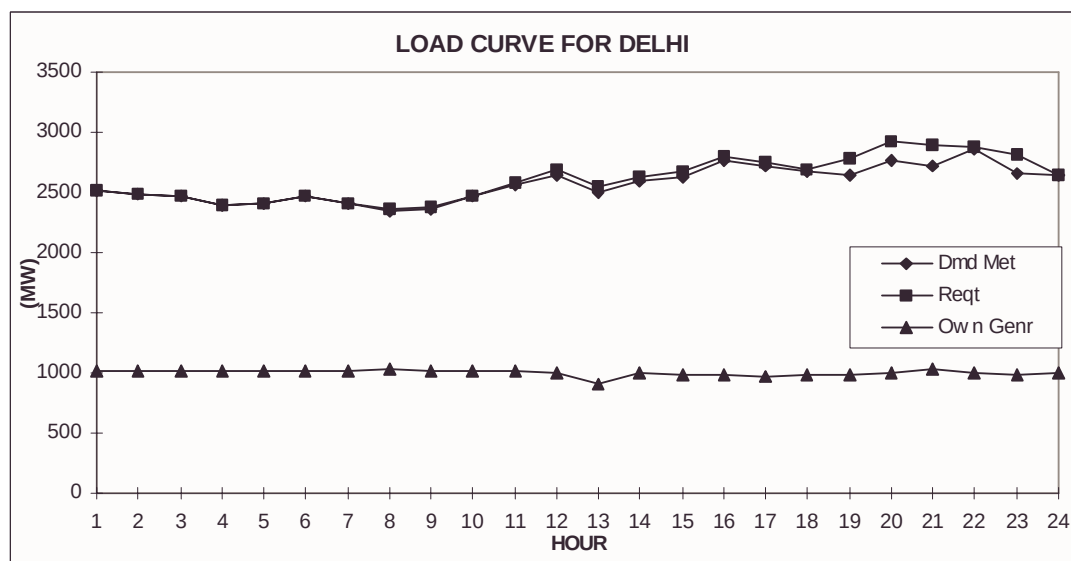
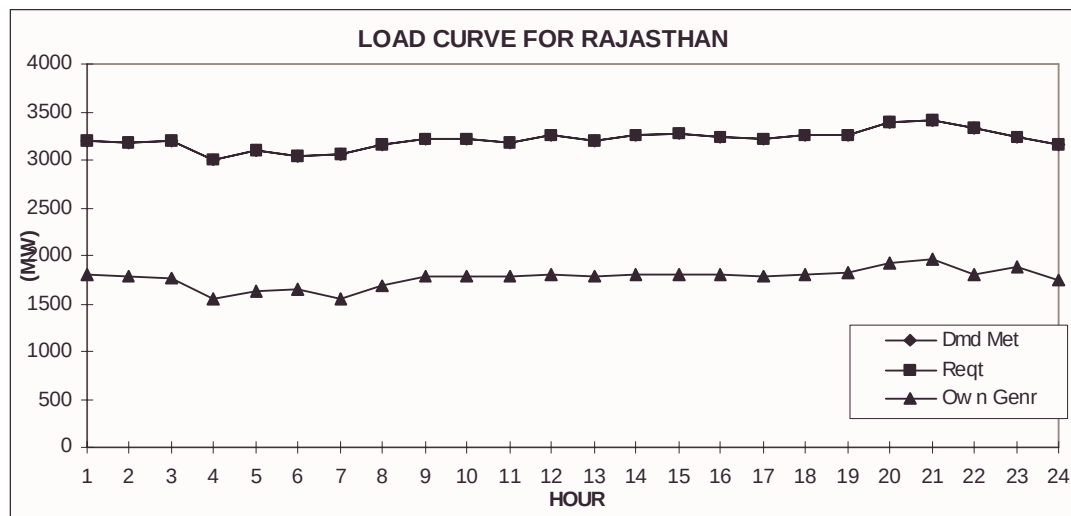


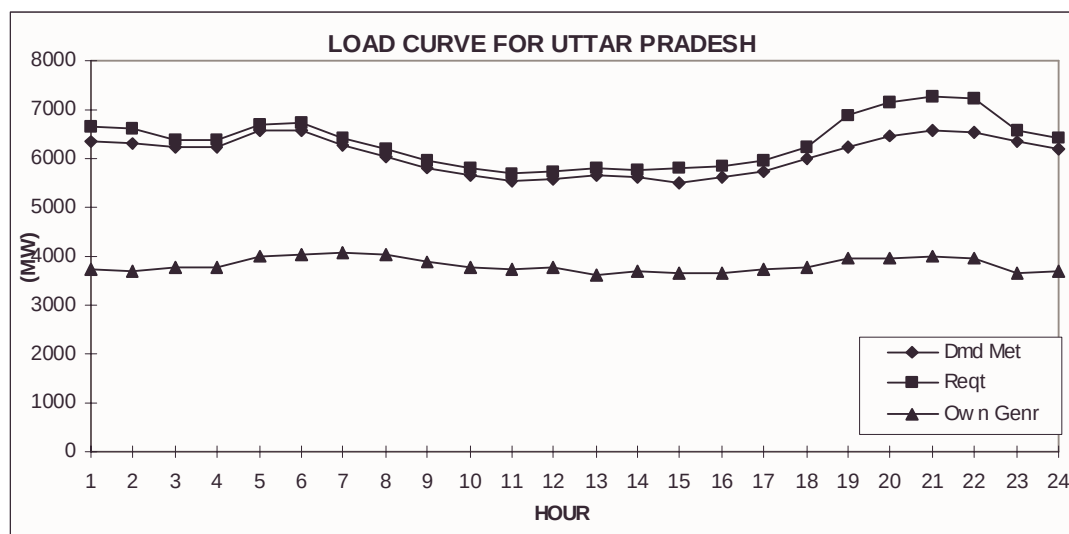
DAYWISE DEMAND MET AND REQUIREMENT (In MU) OF NORTHERN REGION DURING SEPTEMBER 2001



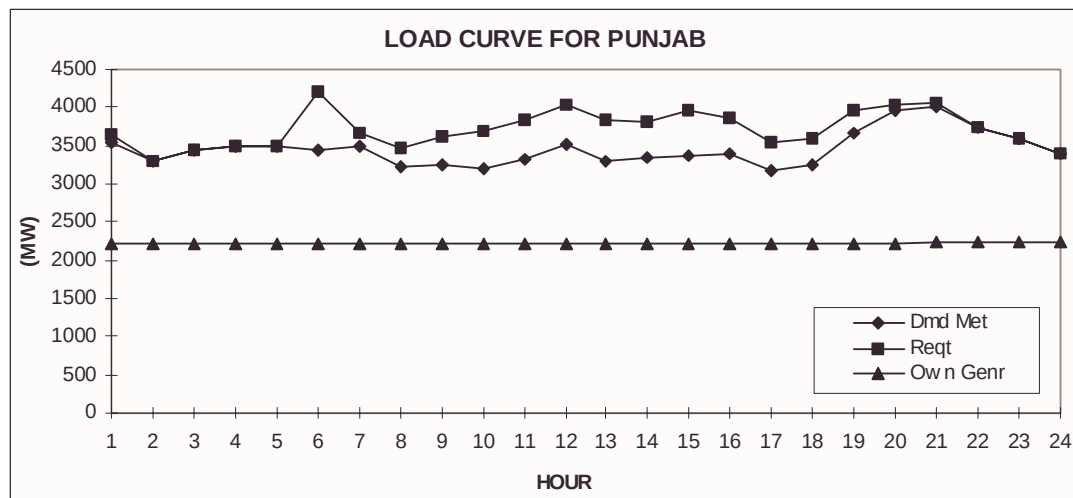
STATE LOAD CURVES FOR REGIONAL MAXIMUM DEMAND MET DAY(11.09.2001)

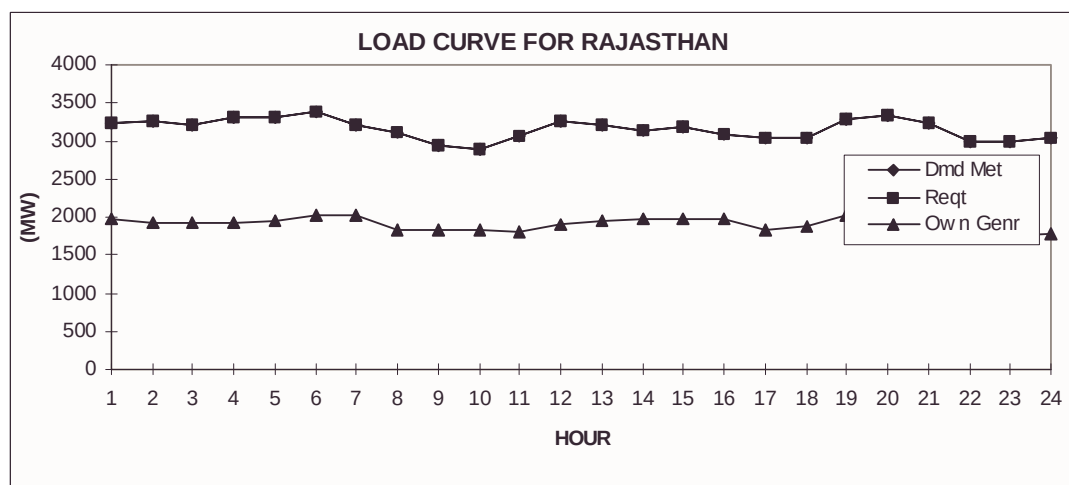
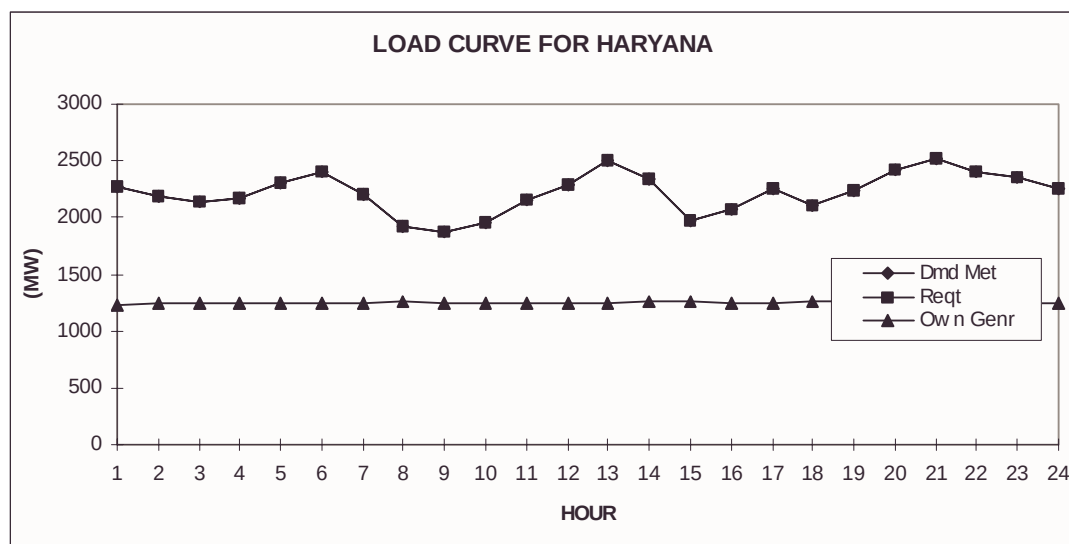


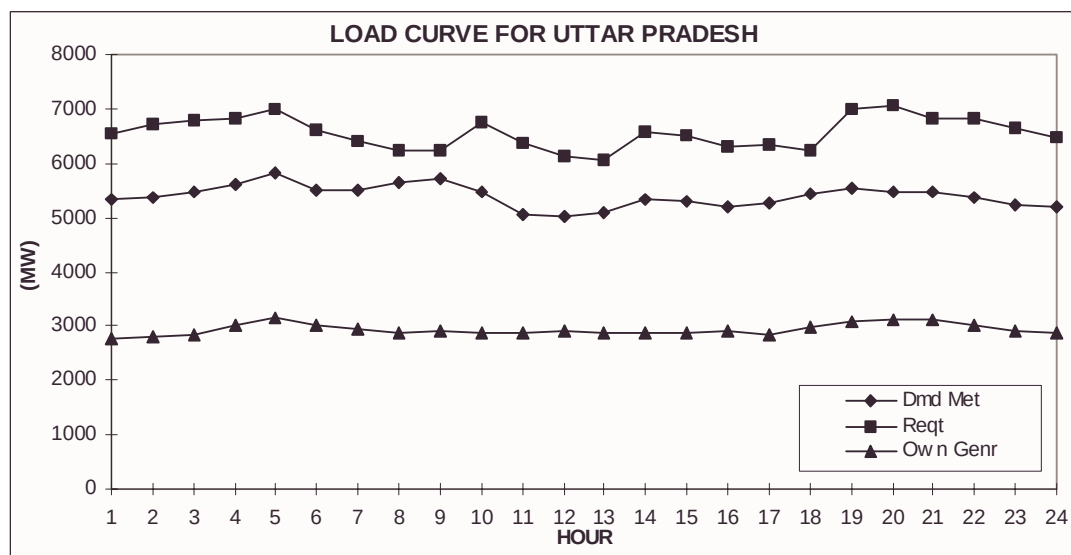
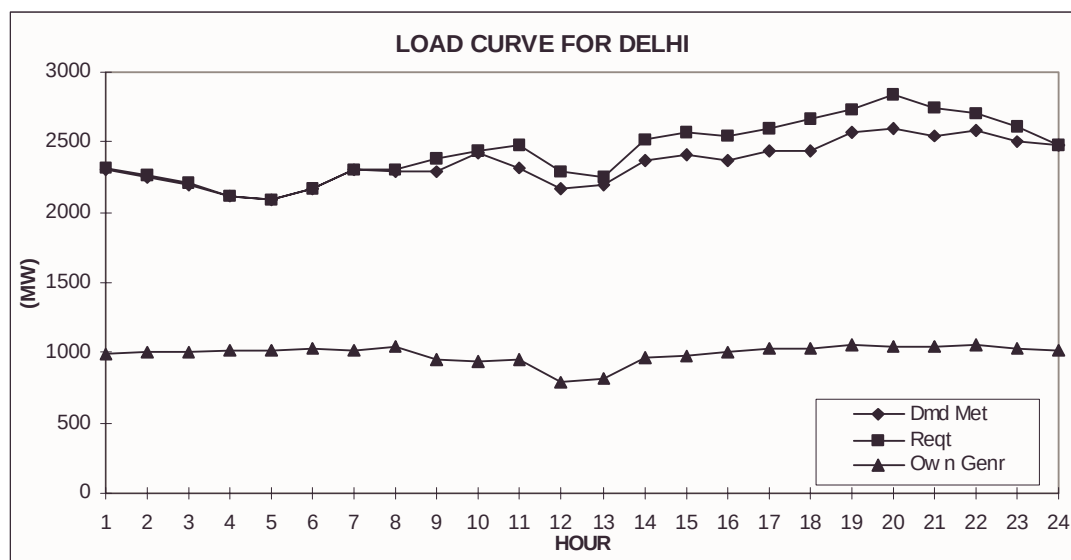




STATE LOAD CURVES FOR REGIONAL MINIMUM DEMAND MET DAY(26.09.2001)







MINOR GRID INCIDENTS DURING SEPTEMBER 2001

S No.	DATE	TIME	INCIDENT
1	04.09.2001	12:07	Singrauli unit # 6 & 7 (500MW each) tripped simultaneously due to tripping of Circulating water pump. The machines were on full load at the time of tripping. Units 6 & 7 were synchronized at 13:54 and 15:45 hrs respectively.
2	12.09.2001	05:05	400 kV Agra-Muradnagar and 400 kV Agra-Unnao tripped along with ICT at Agra(UPPCL). The system normalized by 06:12 hrs.
3	20.09.2001	10:56	Four running units each of 210 MW at Obra TPS tripped alongwith 400 kV Obra-Anpara line.All the units were synchronized by 14:16 hrs.
4	25.09.2001	12:03	220 kV Badarpur-Indraprasth Extn. Tripped on earth fault which resulted in tripping of all the I.P, Rajghat & Delhi(GT) stations causing a generation loss of around 300 MW. The circuits were charged at 12:10 hrs but again tripped at 12:58hrs on the same reason. Finally both circuits were charged at 13:49hrs and units were synchronized before evening peak hours.
5	26.09.2001	11:05	An incident occurred in Delhi system similar to that of 25.09.2001.The system restored before evening peak hrs. of 26.09.2001.