

# पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पावरग्रिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)

## उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 27.10.2016

Date of Reporting : 28.10.2016



### I. Regional Availability/Demand:

Evening Peak (19:00 Hrs) MW				Off Peak (03:00 Hrs) MW				Day Energy (Net MU)	
Demand Met	Shortage	Requirement	Freq* (Hz)	Demand Met	Shortage	Requirement	Freq* (Hz)	Demand Met	Shortage
41705	441	42146	50.10	34186	440	34626	50.08	883.3	10.84

\* Half hourly (two 15 minutes block-one block each before and after the designated time) average frequency

### II. A. State's Load Details (At States periphery) in MUs:

UI [OD:(+ve), UD: (-ve)]

State	State's Control Area Generation (Net MU)				Drawal Schedule (Net MU)	Actual Drawal (Net MU)	UI (Net MU)	Consumption (Net MU)	Shortages * (MU)
	Thermal	Hydro	Renewable/others \$	Total					
Punjab	46.12	8.98	0.66	55.75	57.84	57.69	-0.15	113.45	0.00
Haryana	30.09	0.60	0.00	30.68	90.83	90.53	-0.30	121.22	0.00
Rajasthan	124.90	4.10	6.67	135.67	61.76	64.43	2.68	200.10	2.03
Delhi	15.22		0.00	15.22	59.62	58.99	-0.64	74.21	0.02
UP	171.39	13.30	0.00	184.69	93.49	92.08	-1.41	276.78	0.00
Uttarakhand		9.54	0.00	12.50	20.40	22.09	1.69	34.59	0.00
HP		5.34	2.52	7.86	15.45	16.42	0.97	24.28	0.00
J & K		8.77	0.00	8.77	30.62	26.36	-4.25	35.13	8.78
Chandigarh				0.00	3.72	3.52	-0.21	3.52	0.00
<b>Total</b>	<b>387.71</b>	<b>50.62</b>	<b>9.85</b>	<b>451.15</b>	<b>433.74</b>	<b>432.13</b>	<b>-1.61</b>	<b>883.27</b>	<b>10.84</b>

\* Shortage furnished by the respective constituent's Others include UP Co-generation and JK Diesel

### II. B. State's Demand Met in MWs:

UI/OA/PX [OD/Import: (+ve), UD/Export: (-ve)]

State	Evening Peak (19:00 Hrs) MW				Off Peak (03:00 Hrs) MW				Maximum Demand Met (MW) and Time(Hrs)	Shortage (MW)	
	Demand Met	Shortage	UI	STOA/PX transaction	Demand Met	Shortage	UI	STOA/PX transaction			
Punjab	5166	0	-186	-495	3930	0	108	-93	5166	19:00	0
Haryana	6766	0	-56	531	3987	0	110	151	6766	19:00	0
Rajasthan	8851	0	148	446	8243	126	224	449	9028	7:00	226
Delhi	3821	0	-102	-72	2489	0	58	-444	3821	19:00	0
UP	12144	0	-454	-4	12172	0	-319	155	12750	1:00	0
Uttarakhand	1795	0	55	271	1216	0	151	242	1795	19:00	0
HP	1209	0	23	-170	791	0	77	157	1327	8:00	0
J&K	1763	441	-172	424	1255	314	-106	305	1763	19:00	441
Chandigarh	191	0	-28	0	103	0	2	0	191	19:00	0
<b>Total</b>	<b>41705</b>	<b>441</b>	<b>-771</b>	<b>931</b>	<b>34186</b>	<b>440</b>	<b>304</b>	<b>923</b>	<b>41705</b>	<b>19:00</b>	<b>441</b>

\* STOA figures are at sellers boundary & PX figures are at regional boundary. # figures may not be at simultaneous hour.

Diversity is 1.02

UI [OD:(+ve), UG: (-ve)]

### III. Regional Entities :

Station/ Constituent	Inst. Capacity (Effective) MW	Declared Capacity(MW)	Peak MW	Off Peak MW	Energy	Average	Schedule	UI
			(Gross)	(Gross)	(Net MU)	Sentout(MW)	Net MU	Net MU
<b>A. NTPC</b>								
Singrauli STPS (5*200+2*500)	2000	1649	1424	1800	39.52	1647	38.79	0.74
Rihand I STPS (2*500)	1000	923	987	951	21.75	906	21.60	0.15
Rihand II STPS (2*500)	1000	943	1005	893	22.32	930	21.98	0.35
Rihand III STPS (2*500)	1000	472	506	492	11.34	472	11.10	0.24
Dadri I STPS (4*210)	840	815	269	294	6.98	291	7.14	-0.16
Dadri II STPS (2*490)	980	980	696	667	16.40	683	17.20	-0.80
Unchahar I TPS (2*210)	420	328	306	308	6.23	260	6.57	-0.34
Unchahar II TPS (2*210)	420	402	313	276	6.53	272	7.03	-0.50
Unchahar III TPS (1*210)	210	201	172	144	3.50	146	3.66	-0.17
ISTPP (Jhajjar) (3*500)	1500	1425	405	313	8.24	343	8.40	-0.16
Dadri GPS (4*130.19+2*154.51)	830	785	286	329	7.44	310	7.72	-0.27
Anta GPS (3*88.71+1*153.2)	419	388	0	0	0.00	0	0.00	0.00
Auraiya GPS (4*111.19+2*109.30)	663	624	0	0	0.00	0	0.00	0.00
Dadri Solar(5)	5	1	0	0	0.00	0	0.02	-0.02
Unchahar Solar(10)	10	2	0	0	0.05	2	0.05	0.00
Singrauli Solar(15)	15	2	0	0	0.01	0	0.05	-0.05
KHEP(4*200)	800	858	858	0	4.25	177	3.75	0.50
<b>Sub Total (A)</b>	<b>12112</b>	<b>10797</b>	<b>7227</b>	<b>6467</b>	<b>155</b>	<b>6440</b>	<b>155</b>	<b>-0.48</b>
<b>B. NPC</b>								
NAPS (2*220)	440	393	433	433	9.52	397	9.44	0.08
RAPS- B (2*220)	440	384	430	427	9.24	385	9.22	0.03
RAPS- C (2*220)	440	55	150	0	1.46	61	1.32	0.14
<b>Sub Total (B)</b>	<b>1320</b>	<b>832</b>	<b>1013</b>	<b>860</b>	<b>20.23</b>	<b>843</b>	<b>19.98</b>	<b>0.25</b>
<b>C. NHPC</b>								
Chamera I HPS (3*180)	540	540	543	0	2.66	111	2.40	0.26
Chamera II HPS (3*100)	300	301	206	0	2.13	89	2.09	0.05
Chamera III HPS (3*77)	231	231	226	0	1.12	47	1.00	0.12
Bairasuli HPS(3*60)	180	179	122	0	0.74	31	0.68	0.06
Salal-HPS (6*115)	690	167	309	110	4.65	194	4.01	0.64
Tanakpur-HPS (3*31.4)	94	45	50	54	1.29	54	1.08	0.21
Uri-I HPS (4*120)	480	86	80	21	2.30	96	2.07	0.23
Uri-II HPS (4*60)	240	59	38	76	1.47	61	1.41	0.07
Dhauliganga-HPS (4*70)	280	280	271	0	1.63	68	1.47	0.16
Dulhasti-HPS (3*130)	390	383	395	131	5.45	227	5.20	0.25
Sewa-II HPS (3*40)	120	119	117	0	0.34	14	0.36	-0.02
Parbati 3 (4*130)	520	296	286	0	0.89	37	0.85	0.05
<b>Sub Total (C)</b>	<b>4065</b>	<b>2686</b>	<b>2643</b>	<b>392</b>	<b>25</b>	<b>1028</b>	<b>23</b>	<b>2.07</b>
<b>D.SJVNL</b>								
NJPC (6*250)	1500	1605	1559	0	11.03	460	11.00	0.03
Rampur HEP (6*68.67)	412	442	448	0	3.18	132	3.07	0.11
<b>Sub Total (D)</b>	<b>1912</b>	<b>2047</b>	<b>2007</b>	<b>0</b>	<b>14.21</b>	<b>592</b>	<b>14.07</b>	<b>0.14</b>
<b>E. THDC</b>								
Tehri HPS (4*250)	1000	1071	1063	0	7.15	298	6.80	0.35
Koteshwar HPS (4*100)	400	91	102	91	2.20	92	2.19	0.01
<b>Sub Total (E)</b>	<b>1400</b>	<b>1163</b>	<b>1165</b>	<b>91</b>	<b>9.34</b>	<b>389</b>	<b>8.99</b>	<b>0.35</b>
<b>F. BBMB</b>								
Bhakra HPS (2*108+3*126+5*157)	1379	559	1046	479	13.82	576	13.41	0.41
Dehar HPS (6*165)	990	236	330	155	5.77	240	5.68	0.09
Pong HPS (6*66)	396	49	132	0	1.21	50	1.18	0.03
<b>Sub Total (F)</b>	<b>2765</b>	<b>845</b>	<b>1508</b>	<b>634</b>	<b>20.80</b>	<b>867</b>	<b>20.27</b>	<b>0.53</b>
<b>G. IPP(s)/JV(s)</b>								
ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	73	0	0.85	35	0.84	0.01
KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	825	0	5.97	249	5.93	0.05
Malana Stg-II HPS (2*50)	100	0	0	0	0.45	19	0.43	0.02
Shree Cement TPS (2*150)	300	0	-1	-1	-0.04	-2	0.00	-0.04
Budhil HPS(IPP) (2*35)	70	0	24	10	0.31	13	0.35	-0.05
<b>Sub Total (G)</b>	<b>1662</b>	<b>0</b>	<b>922</b>	<b>9</b>	<b>7.54</b>	<b>314</b>	<b>7.55</b>	<b>-0.01</b>
<b>H. Total Regional Entities (A-G)</b>	<b>25237</b>	<b>18369</b>	<b>16484</b>	<b>8453</b>	<b>251.36</b>	<b>10474</b>	<b>248.51</b>	<b>2.86</b>

I. State Entities	Station	Effective Installed Capacity (MW)	Peak MW	Off Peak MW	Energy(MU)	Average(Sent out MW)	
Punjab	Guru Gobind Singh TPS (Ropar) (6*210)	1260	160	160	3.65	152	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	0	0	-0.02	-1	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	206	200	4.68	195	
	Goindwal(GVK) (2*270)	540	0	0	-0.02	-1	
	Rajpura (2*700)	1400	1320	920	27.99	1166	
	Talwandi Saboo (3*660)	1980	308	308	9.84	410	
	<b>Thermal (Total)</b>	<b>6560</b>	<b>1994</b>	<b>1588</b>	<b>46.12</b>	<b>1921</b>	
	Total Hydro	1000	388	326	8.98	374	
	Wind Power	0	0	0	0.00	0	
	Biomass	288	20	20	0.48	20	
	Solar	560	0	0	0.18	7	
	<b>Renewable(Total)</b>	<b>848</b>	<b>20</b>	<b>20</b>	<b>0.66</b>	<b>27</b>	
	<b>Total Punjab</b>	<b>8408</b>	<b>2402</b>	<b>1934</b>	<b>55.75</b>	<b>2323</b>	
	Haryana	Panipat TPS (2*210+2*250)	920	204	198	4.94	206
		DCRTPP (Yamuna nagar) (2*300)	600	261	228	5.55	231
Faridabad GPS (NTPC)(2*137.75+1*1156)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	1081	770	19.60	817	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	0	0	0.00	0	
<b>Thermal (Total)</b>		<b>4497</b>	<b>1546</b>	<b>1196</b>	<b>30.09</b>	<b>1254</b>	
Total Hydro		62	13	28	0.60	25	
Wind Power		0	0	0	0.00	0	
Biomass		40	0	0	0.00	0	
Solar		0	0	0	0.00	0	
<b>Renewable(Total)</b>		<b>40</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	
<b>Total Haryana</b>		<b>4599</b>	<b>1559</b>	<b>1224</b>	<b>30.68</b>	<b>1278</b>	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	1114	1130	27.00	1125
		suratgarh TPS (6*250)	1500	1116	1149	26.50	1104
	Chabra TPS (4*250)	1000	228	910	21.70	904	
	Dholpur GPS (3*110)	330	0	0	0.00	0	
	Ramgarh GPS(1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	151	153	3.80	158	
	RAPS A (NPC) (1*100+1*200)	300	0	0	0.00	0	
	Barsingsar (NLC) (2*125)	250	228	225	5.40	225	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	589	593	14.00	583	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	540	475	11.90	496	
	Kawai(Adani) (2*660)	1320	612	607	14.60	608	
	<b>Thermal (Total)</b>	<b>8876</b>	<b>4578</b>	<b>5242</b>	<b>124.90</b>	<b>5204</b>	
	Total Hydro	550	146	186	4.10	171	
	Wind power	4017	183	136	3.40	142	
	Biomass	99	18	18	0.44	18	
	Solar	1295	0	0	2.83	118	
	Renewable/Others (Total)	5411	201	154	6.67	278	
	<b>Total Rajasthan</b>	<b>14837</b>	<b>4925</b>	<b>5582</b>	<b>135.67</b>	<b>5653</b>	
UP	Anpara TPS (3*210+2*500)	1630	1238	1194	28.90	1204	
	Obra TPS (2*50+2*94+5*200)	1194	303	304	7.20	300	
	Paricha TPS (2*110+2*220+2*250)	1160	653	828	16.30	679	
	Panki TPS (2*105)	210	135	1449	3.30	138	
	Harduaganj TPS (1*60+1*105+2*250)	665	389	470	9.50	396	
	Tanda TPS (NTPC) (4*110)	440	274	365	7.39	308	
	Roza TPS (IPP) (4*300)	1200	743	1008	19.30	804	
	Anpara-C (IPP) (2*600)	1200	927	972	23.20	967	
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	282	283	6.80	283	
	Anpara-D(2*500)	1000	435	446	10.70	446	
	Lalitpur TPS(3*660)	1980	950	1127	23.30	971	
	Bara(2*660)	1320	553	549	13.10	546	
	<b>Thermal (Total)</b>	<b>12449</b>	<b>6882</b>	<b>8995</b>	<b>168.99</b>	<b>7041</b>	
	Vishnuparyag HPS (IPP)(4*110)	440	172	177	6.80	283	
	Alaknada(4*82.5)	330	164	83	3.30	138	
	Other Hydro	527	104	240	3.20	133	
	Cogeneration	981	100	100	2.40	100	
	Wind Power	0	0	0	0.00	0	
	Biomass	26	0	0	0.00	0	
	Solar	102	0	0	0.00	0	
	<b>Renewable(Total)</b>	<b>128</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	
	<b>Total UP</b>	<b>14855</b>	<b>7422</b>	<b>9595</b>	<b>184.69</b>	<b>7696</b>	
	Uttarakhand	Other Hydro	1250	595	256	9.54	398
Total Gas		225	128	112	2.96	123	
Wind Power		0	0	0	0.00	0	
Biomass		127	0	0	0.00	0	
Solar		20	0	0	0.00	0	
Small Hydro (< 25 MW)		180	0	0	0.00	0	
<b>Renewable(Total)</b>		<b>327</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>	
<b>Total Uttarakhand</b>		<b>1802</b>	<b>723</b>	<b>368</b>	<b>12.50</b>	<b>521</b>	
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	77	77	1.85	77	
	Pragati Gas Turbine (2x104+ 1x122)	330	151	155	3.74	156	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	251	251	6.03	251	
	Badarpur TPS (NTPC) (3*95+2*210)	705	268	268	3.61	150	
	<b>Thermal (Total)</b>	<b>2917</b>	<b>747</b>	<b>751</b>	<b>15.22</b>	<b>634</b>	
	Wind Power	0	0	0	0.00	0	
	Biomass	16	0	0	0.00	0	
	Solar	2	0	0	0.00	0	
<b>Renewable(Total)</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>		
<b>Total Delhi</b>	<b>2935</b>	<b>747</b>	<b>751</b>	<b>15.22</b>	<b>634</b>		

HP	Baspa HPS (IPP) (3*100)	300	27	27	1.85	77
	Malana HPS (IPP) (2*43)	86	35	0	0.48	20
	Other Hydro	372	166	110	3.01	126
	Wind Power	0	0	0	0.00	0
	Biomass	0	0	0	0.00	0
	Solar	0	0	0	0.00	0
	Small Hydro (< 25 MW)	486	114	102	2.52	105
	<b>Renewable(Total)</b>	<b>486</b>	<b>114</b>	<b>102</b>	<b>2.52</b>	<b>105</b>
	<b>Total HP</b>	<b>1244</b>	<b>343</b>	<b>238</b>	<b>7.86</b>	<b>327</b>
	J & K	Baglihar HPS (IPP) (3*150+3*150)	900	250	250	6.00
Other Hydro/IPP(including 98 MW Small Hydro)		308	138	93	2.77	115
Gas/Diesel/Others		190	0	0	0.00	0
Wind Power		0	0	0	0.00	0
Biomass		0	0	0	0.00	0
Solar		0	0	0	0.00	0
Small Hydro (< 25 MW)Included in Other Hydro Above		98	0	0	0.00	0
<b>Renewable(Total)</b>		<b>98</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0</b>
<b>Total J &amp; K</b>		<b>1398</b>	<b>388</b>	<b>343</b>	<b>9</b>	<b>365</b>
<b>Total State Control Area Generation</b>		<b>50078</b>	<b>18509</b>	<b>20035</b>	<b>451.15</b>	<b>18798</b>
<b>J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]</b>		<b>8151</b>	<b>8036</b>	<b>204.14</b>	<b>8506</b>	
<b>Total Regional Availability(Gross)</b>	<b>75315</b>	<b>43144</b>	<b>36525</b>	<b>906.65</b>	<b>37777</b>	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	9079	1117	80.56	3357
State Control Area Hydro	7163	2441	1989	53.15	2338
<b>Total Regional Hydro</b>	<b>19397</b>	<b>11519</b>	<b>3107</b>	<b>133.70</b>	<b>5694</b>

V. Total Renewable Generation:

Regional Entities Renewable	30	0	0	0.05	2
State Control Area Renewable	7356	335	276	9.85	410
<b>Total Regional Renewable</b>	<b>7386</b>	<b>335</b>	<b>276</b>	<b>9.90</b>	<b>412</b>

VI(A). Inter Regional Exchange [Import (+ve)/Export (-ve)] [Linkwise]

Element	Peak(19:00 Hrs) MW	Off Peak(03:00 Hrs) MW	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
			Import	Export	Import	Export	
Vindhychall(HVDC B/B)	-250	-250	0	250	5.18	0.00	5.18
765 KV Gwalior-Agra (D/C)	2497	2241	2713	0	54.93	0.00	54.93
400 KV Zerda-Kankroli	79	28	125	107	0.38	0.00	0.38
400 KV Zerda-Bhinmal	133	101	197	26	2.00	0.00	2.00
220 KV Auraiya-Malanpur	-33	-45	0	55	0.00	0.90	-0.90
220 KV Badod-Kota/Morak	39	13	39	43	1.22	0.00	1.22
Mundra-Mohindergerh(HVDC Bipole)	2302	2302	2307	0.00	48.38	0.00	48.38
400 KV Vindhychal - Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	1207	1345	1472	0	33.07	0.00	33.07
<b>Sub Total WR</b>	<b>5974</b>	<b>5735</b>			<b>145.16</b>	<b>0.90</b>	<b>144.26</b>
Pusauli Bypass/HVDC	68	49	300	0	2.05	0.00	2.05
400 KV MZP- GKP (D/C)	359	358	578	0	10.77	0.00	10.77
400 KV Patna-Balia(D/C) X 2	609	394	696	0	12.81	0.00	12.81
400 KV B Sharif-Balia (D/C)	123	124	248	0	3.74	0.00	3.74
765 KV Gaya-Balia	298	243	327	0	6.61	0.00	6.61
765 KV Gaya-Varanasi (D/C)	556	447	723	0	13.66	0.00	13.66
220 KV Pusauli-Sahupuri	149	210	219	0	4.45	0.00	4.45
132 KV K'nasa-Sahupuri	-26	-24	0	36	0.00	0.60	-0.60
132 KV Son Ngr-Rihand	-24	-34	0	46	0.00	0.90	-0.90
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-107	-109	62	124	0.00	0.98	-0.98
400 KV Barh -GKP (D/C)	428	330	504	0	8.69	0.00	8.69
400 kV B Sharif - Varanasi (D/C)	44	13	247	0	2.64	0.00	2.64
<b>Sub Total ER</b>	<b>2477</b>	<b>2001</b>			<b>65.43</b>	<b>2.47</b>	<b>62.95</b>
+/- 800 KV BiswanathChariali-Agra	-300	300	300	300.00	0.00	3.08	-3.08
<b>Sub Total NER</b>	<b>-300</b>	<b>300</b>			<b>0.00</b>	<b>3.08</b>	<b>-3.08</b>
<b>Total IR Exch</b>	<b>8151</b>	<b>8036</b>			<b>210.59</b>	<b>6.45</b>	<b>204.14</b>

VI(B). Inter Regional Schedule & Actual Exchanges [Import (+ve)/Export (-ve)] [Corridor wise]

ISGS/LT Schedule (MU)			Bilateral Schedule (MU)		Power Exchange Shdl (MU)		Wheeling (MU)	
ER	Bhutan	Total	Through ER	Through WR	Through ER	Through WR	Through ER	Through WR
71.13	0.00	71.13	0.00	0.00	0.00	0.00	0.00	0.00

Total IR Schedule (MU)			Total IR Actual (MU)			Net IR UI (MU)		
Through ER	Through WR Inclds Mndra	Total	Through ER(including NER)	Through WR	Total	Through ER (including NER)	Through WR	Total
71.13	127.90	199.02	59.88	144.26	204.14	-11.25	16.37	5.12

VI(C). Inter National Exchange with Nepal [Import (+ve)/Export (-ve)] [Linkwise]

Element	Peak(19:00 Hrs) MW	Off Peak(03:00 Hrs) MW	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
			Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	0	0	0	18	0	0	-0.17

VII. Frequency Profile <----- % of Time Frequency ----->

<49.2	<49.7	<49.8	<49.9	<50.0	49.9-50.05	50.05-50.10	50.10-50.20	>50.20	>50.50
0.00	0.00	0.21	6.77	54.24	76.69	13.19	3.70	0.14	0.00

<----- Frequency (Hz) ----->				Average Frequency Hz	Frequency Variation Index	Std. Dev.	Frequency in 15 Min Block		Freq Dev Index (% of Time)
Maximum		Minimum					MAX (Hz)	MIN (Hz)	
Freq	Time	Freq	Time						
50.21	18.01	49.77	4.08	49.99	0.040	0.062	50.19	0.00	23.31

## VIII(A). Voltage profile 400 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviat
		Voltage(KV)	Time	Voltage (KV)	Time	<380 kV	<390 kV	>420 kV	>430 kV	
Rihand	400	410	0:00	402	15:46	0.0	0.0	0.0	0.0	0.0
Gorakhpur	400	417	6:04	399	14:37	0.0	0.0	0.0	0.0	0.0
Bareilly(PG)400kV	400	404	0:00	404	0:00	0.0	0.0	0.0	0.0	0.0
Kanpur	400	418	3:00	401	12:16	0.0	0.0	0.0	0.0	0.0
Dadri	400	421	2:54	398	14:41	0.0	0.0	1.2	0.0	1.2
Ballabgarh	400	429	2:56	402	11:38	0.0	0.0	42.6	0.0	42.6
Bawana	400	423	1:08	400	11:37	0.0	0.0	19.7	0.0	19.7
Bassi	400	423	4:03	400	11:23	0.0	0.0	0.9	0.0	0.9
Hissar	400	420	2:58	397	14:41	0.0	0.0	0.0	0.0	0.0
Moga	400	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Abdullapur	400	428	1:28	404	18:28	0.0	0.0	33.9	0.0	33.9
Nalagarh	400	429	3:05	408	11:43	0.0	0.0	37.0	0.0	37.0
Kishenpur	400	424	2:59	392	18:17	0.0	0.0	8.7	0.0	8.7
Wagoora	400	413	3:00	365	18:17	5.4	39.4	0.0	0.0	5.4
Amritsar	400	428	2:56	405	11:26	0.0	0.0	34.4	0.0	34.4
Kashipur	400	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Hamirpur	400	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Rishikesh	400	413	4:03	386	14:41	0.0	3.4	0.0	0.0	0.0

## VIII(B). Voltage profile 765 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)				Voltage Deviat
		Voltage(KV)	Time	Voltage (KV)	Time	<728 kV	<742 kV	>800 kV	>820 kV	
Fatehpur	765	779	2:59	746	18:25	0.0	0.0	0.0	0.0	0.0
Balia	765	784	6:02	758	18:11	0.0	0.0	0.0	0.0	0.0
Moga	765	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Agra	765	792	2:59	753	14:41	0.0	0.0	0.0	0.0	0.0
Bhiwani	765	806	3:00	767	14:36	0.0	0.0	12.4	0.0	12.4
Unnao	765	765	6:04	736	15:43	0.0	12.8	0.0	0.0	0.0
Lucknow	765	786	6:03	754	14:37	0.0	0.0	0.0	0.0	0.0
Meerut	765	806	2:58	754	11:39	0.0	0.0	8.3	0.0	8.3
Jhatikara	765	803	2:58	764	14:41	0.0	0.0	3.9	0.0	3.9
Bareilly 765 kV	765	784	6:04	749	11:37	0.0	0.0	0.0	0.0	0.0
Anta	765	795	21:44	766	14:33	0.0	0.0	0.0	0.0	0.0
Phagi	765	796	2:49	766	11:52	0.0	0.0	0.0	0.0	0.0

Note : '0' in Max / Min Col -&gt; Telemetry Outage

## IX. Reservoir Parameters:

Name of Reservoir	Parameters		Present Parameters		Last Year		Last day	
	FRL (m)	MDDL (m)	Level (m)	Energy (MU)	Level (m)	Energy (MU)	Inflow (m <sup>3</sup> /s)	Usage (m <sup>3</sup> /s)
Bhakra	513.59	445.62	499.10	1053.16	509.58	1530.03	256.01	420.31
Pong	426.72	384.05	415.12	680.86	418.89	834.82	59.86	74.73
Tehri	829.79	740.04	823.50	1075.00	818.40	970.00	61.31	155.00
Koteswar	612.50	598.50	610.17	4.69	610.76	4.69	155.00	144.72
Chamera-I	760.00	748.75	760.00	0.00	0.00	0.00	73.68	71.92
Rihand	268.22	252.98	0.00	0.00	0.00	0.00	0.00	0.00
RPS	352.80	343.81	0.00	0.00	0.00	0.00	0.00	0.00
Jawahar Sagar	298.70	295.78	0.00	0.00	0.00	0.00	0.00	0.00
RSD	527.91	487.91	514.06	4.96	511.96	4.71	42.85	247.13

\* NA: Not Available

## X(A). Short-Term Open Access Details:

State	Off- Peak Hours (03:00 Hrs)			Peak Hours (19:00 Hrs)			Day Energy (MU)		
	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MU)	IEX / PXIL (MU)	Total (MU)
Punjab	-93	0	0	-93	-402	0	-2.22	-1.37	-3.59
Delhi	6	-450	0	-94	22	0	-0.35	-1.92	-2.27
Haryana	-44	195	0	160	371	0	1.85	5.94	7.79
HP	83	74	0	-6	-164	0	3.29	-2.51	0.78
J&K	165	139	0	165	259	0	5.76	4.16	9.92
CHD	0	0	0	0	0	0	0.00	0.08	0.08
Rajasthan	-5	454	0	-7	454	0	-0.13	14.51	14.39
UP	155	0	0	95	-100	0	-3.09	-1.53	-4.63
Uttarakhand	12	230	0	25	246	0	0.39	7.64	8.03
Total	281	643	0	246	685	0	5.50	25.01	30.51

## X(B). Short-Term Open Access Details:

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-93	-93	0	-503	0	0
Delhi	6	-94	199	-572	0	0
Haryana	249	-65	424	-238	0	0
HP	252	-6	281	-622	0	0
J&K	315	165	338	80	0	0
CHD	0	0	0	0	30	-39
Rajasthan	-5	-7	1141	429	0	0
UP	207	-474	0	-100	0	0
Uttarakhand	25	8	588	76	0	0

**XI. System Reliability Indices(Violation of TTC and ATC):**

(i)%age of times N-1 Criteria was violated in the inter - regional corridors

<b>WR</b>	<b>0.00%</b>
<b>ER</b>	<b>0.00%</b>
<b>Simultaneous</b>	<b>0.00%</b>

(ii)%age of times ATC violated on the inter-regional corridors

<b>WR</b>	<b>2.43%</b>
<b>ER</b>	<b>0.00%</b>
<b>Simultaneous</b>	<b>0.00%</b>

(iii)%age of times Angular Difference on Important Buses was beyond permissible limits(40 deg.)

<b>Rihand - Dadri</b>	<b>0.00%</b>
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**XII. Zero Crossing Violations**

State	No. of violations(Maximum 8 in a day)	Maximum number of continuous blocks without sign change
Punjab	3	23
Haryana	1	16
Rajasthan	3	27
Delhi	4	25
UP	0	12
Uttarakhand	2	34
HP	3	35
J & K	4	23
Chandigarh	3	40

**XIII. System Constraints:****XIV. Grid Disturbance / Any Other Significant Event:****XV. Weather Conditions For 27.10.2016 :**  
Normal**XVI. Synchronisation of new generating units :****XVII. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / /substation :**

1. New 240MVA ICT-1 at 400kV Muradnagar-2 charged on no load at 1740Hrs of 27.10.16
2. Filter bank Z3.Z4 at HVDC Agra charged at 1721Hrs of 27.10.16
3. 315MVA ICT-3 at 400kV Sambha charged on load at 1514Hrs of 27.10.16
4. 125MVA B/R-2 at 400kV Kaithal first time charged at 1748Hrs of 27.10.16

**XVIII. Tripping of lines in pooling stations :****XIX. Complete generation loss in a generating station :**

Note: Data(regarding drawal,generation, shortage , inter-regional flows and reservoir levels)of the constituents filled in the report are as per last furnished data by the respective state/constituent to NRLDC.