

# 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 15.11.2016

Date of Reporting : 16.11.2016



### 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
39196	480	39677	50.10	28784	714	29498	50.10	808.14	11.78

\* 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:

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	38.12	9.06	0.27	47.45	41.72	43.52	1.80	90.96	0.00
Haryana	29.36	0.51	0.00	29.86	75.83	74.48	-1.35	104.34	0.00
Rajasthan	115.63	5.17	6.43	127.23	72.29	75.59	3.30	202.82	0.00
Delhi	14.33		0.00	14.33	40.45	40.90	0.46	55.23	0.01
UP	152.55	8.17	0.00	160.72	93.11	93.41	0.30	254.13	1.31
Uttarakhand		7.90	0.00	7.90	19.41	21.59	2.18	31.51	0.00
HP		4.25	1.94	6.18	17.01	17.81	0.81	23.99	0.00
J & K		7.10	0.00	7.10	34.70	34.90	0.20	42.00	10.46
Chandigarh				0.00	3.31	3.15	-0.17	3.15	0.00
<b>Total</b>	<b>349.98</b>	<b>42.16</b>	<b>8.64</b>	<b>402.79</b>	<b>397.83</b>	<b>405.35</b>	<b>7.52</b>	<b>808.14</b>	<b>11.78</b>

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

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

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	4418	0	176	-338	2805	0	75	-337	4418	19:00	0
Haryana	5769	0	36	-24	3027	0	110	-324	5769	19:00	0
Rajasthan	8692	0	82	499	8009	0	50	712	9853	8:00	0
Delhi	2907	0	87	-311	1525	0	57	-644	2907	19:00	0
UP	12459	0	-126	-195	9989	320	124	129	12538	20:00	70
Uttarakhand	1637	0	22	107	1025	0	121	245	1679	18:00	0
HP	1225	0	-15	-43	742	0	7	327	1354	8:00	0
J&K	1921	480	29	429	1576	394	-26	350	2000	8:00	500
Chandigarh	169	0	-31	-30	85	0	5	-30	169	18:00	0
<b>Total</b>	<b>39196</b>	<b>480</b>	<b>260</b>	<b>93</b>	<b>28784</b>	<b>714</b>	<b>523</b>	<b>428</b>	<b>39196</b>	<b>19:00</b>	<b>480</b>

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

### III. Regional Entities :

Station/ Constituent	Inst. Capacity (Effective) MW	Declared Capacity(MW)	Peak MW (Gross)	Off Peak MW (Gross)	Energy (Net MU)	Average Sentout(MW)	Schedule Net MU	Diversity is 1.04 UI (DG:(+ve), UG: (-ve))	
								UI Net MU	UI Net MU
<b>A. NTPC</b>									
Singrauli STPS (5*200+2*500)	2000	1718	1772	1669	39.96	1665	39.74	0.22	
Rihand I STPS (2*500)	1000	880	831	654	18.14	756	18.03	0.11	
Rihand II STPS (2*500)	1000	963	847	711	19.36	807	19.24	0.13	
Rihand III STPS (2*500)	1000	963	878	745	19.60	817	19.63	-0.03	
Dadri I STPS (4*210)	840	815	183	131	4.20	175	4.35	-0.14	
Dadri II STPS (2*490)	980	980	438	332	8.93	372	9.72	-0.79	
Unchahar I TPS (2*210)	420	355	282	338	7.27	303	7.68	-0.41	
Unchahar II TPS (2*210)	420	402	304	303	7.28	304	7.64	-0.36	
Unchahar III TPS (1*210)	210	201	162	146	3.39	141	3.78	-0.39	
ISTPP (Jhajihar) (3*500)	1500	1425	638	603	14.83	618	15.04	-0.22	
Dadri GPS (4*130.19+2*154.51)	830	586	148	191	3.93	164	4.03	-0.10	
Anta GPS (3*88.71+1*153.2)	419	407	201	192	5.49	229	5.48	0.01	
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	0.01	1	0.01	0.00	
Unchahar Solar(10)	10	2	0	0	0.00	0	0.04	-0.04	
Singrauli Solar(15)	15	2	0	0	0.01	0	0.05	-0.05	
KHEP(4*200)	800	860	850	0	3.59	150	3.30	0.29	
<b>Sub Total (A)</b>	<b>12112</b>	<b>11183</b>	<b>7534</b>	<b>6015</b>	<b>156</b>	<b>6500</b>	<b>158</b>	<b>-1.77</b>	
<b>B. NPC</b>									
NAPS (2*220)	440	406	437	447	9.74	406	9.74	0.00	
RAPS- B (2*220)	440	382	426	427	9.17	382	9.17	0.00	
RAPS- C (2*220)	440	220	233	237	4.95	206	5.28	-0.33	
<b>Sub Total (B)</b>	<b>1320</b>	<b>1008</b>	<b>1096</b>	<b>1111</b>	<b>23.86</b>	<b>994</b>	<b>24.19</b>	<b>-0.33</b>	
<b>C. NHPC</b>									
Chamera I HPS (3*180)	540	540	553	0	2.01	84	1.80	0.21	
Chamera II HPS (3*100)	300	238	305	0	1.22	51	1.15	0.07	
Chamera III HPS (3*77)	231	231	151	0	0.77	32	0.70	0.07	
Bairasuli HPS(3*60)	180	179	180	0	0.67	28	0.63	0.04	
Salal-HPS (6*115)	690	120	300	147	3.26	136	2.89	0.38	
Tanakpur-HPS (3*31.4)	94	35	33	44	0.94	39	0.83	0.10	
Uri-I HPS (4*120)	480	74	230	21	1.95	81	1.77	0.18	
Uri-II HPS (4*60)	240	53	40	80	1.32	55	1.27	0.05	
Dhauliganga-HPS (4*70)	280	236	214	0	1.29	54	1.20	0.09	
Dulhasti-HPS (3*130)	390	383	392	0	4.15	173	3.98	0.16	
Sewa-II HPS (3*40)	120	119	109	0	0.33	14	0.36	-0.03	
Parbati 3 (4*130)	520	220	223	0	0.64	27	0.60	0.04	
<b>Sub Total (C)</b>	<b>4065</b>	<b>2427</b>	<b>2730</b>	<b>292</b>	<b>19</b>	<b>773</b>	<b>17</b>	<b>1.37</b>	
<b>D.SJVNL</b>									
NJPC (6*250)	1500	1605	1506	0	8.82	368	8.80	0.02	
Rampur HEP (6*68.67)	412	442	441	0	2.50	104	2.45	0.05	
<b>Sub Total (D)</b>	<b>1912</b>	<b>2047</b>	<b>1947</b>	<b>0</b>	<b>11.32</b>	<b>472</b>	<b>11.25</b>	<b>0.07</b>	
<b>E. THDC</b>									
Tehri HPS (4*250)	1000	1075	1047	0	6.36	265	6.19	0.17	
Koteshwar HPS (4*100)	400	91	100	92	2.22	93	2.19	0.03	
<b>Sub Total (E)</b>	<b>1400</b>	<b>1166</b>	<b>1147</b>	<b>92</b>	<b>8.58</b>	<b>358</b>	<b>8.38</b>	<b>0.20</b>	
<b>F. BBMB</b>									
Bhakra HPS (2*108+3*126+5*157)	1379	505	988	374	12.47	519	12.12	0.34	
Dehar HPS (6*165)	990	161	495	145	3.95	165	3.86	0.09	
Pong HPS (6*66)	396	176	330	66	4.20	175	4.23	-0.04	
<b>Sub Total (F)</b>	<b>2765</b>	<b>842</b>	<b>1813</b>	<b>585</b>	<b>20.61</b>	<b>859</b>	<b>20.21</b>	<b>0.40</b>	
<b>G. IPP(s)/JV(s)</b>									
ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	56	0	0.68	28	0.65	0.03	
KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	825	0	4.82	201	4.74	0.08	
Malana Stg-II HPS (2*50)	100	0	0	0	0.31	13	0.29	0.02	
Shree Cement TPS (2*150)	300	0	0	0	0.00	0	0.00	0.00	
Budhil HPS(IPP) (2*35)	70	0	38	0	0.28	12	0.23	0.05	
<b>Sub Total (G)</b>	<b>1662</b>	<b>0</b>	<b>919</b>	<b>0</b>	<b>6.10</b>	<b>254</b>	<b>5.92</b>	<b>0.18</b>	
<b>H. Total Regional Entities (A-G)</b>	<b>25237</b>	<b>18674</b>	<b>17187</b>	<b>8094</b>	<b>245.03</b>	<b>10210</b>	<b>244.90</b>	<b>0.13</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	0	0	-0.12	-5	
	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	0	0	-0.08	-3	
	Goindwal(GVK) (2*270)	540	0	0	-0.03	-1	
	Rajpura (2*700)	1400	660	660	22.54	939	
	Talwandi Saboo (3*660)	1980	616	616	15.83	660	
	<b>Thermal (Total)</b>	<b>6560</b>	<b>1276</b>	<b>1276</b>	<b>38.12</b>	<b>1588</b>	
	Total Hydro	1000	379	343	9.06	378	
	Wind Power	0	0	0	0.00	0	
	Biomass	288	10	10	0.23	10	
	Solar	560	2	2	0.04	2	
	<b>Renewable(Total)</b>	<b>848</b>	<b>11</b>	<b>11</b>	<b>0.27</b>	<b>11</b>	
	<b>Total Punjab</b>	<b>8408</b>	<b>1666</b>	<b>1630</b>	<b>47.45</b>	<b>1977</b>	
	Haryana	Panipat TPS (2*210+2*250)	920	0	0	0.00	0
		DCRTPP (Yamuna nagar) (2*300)	600	461	461	11.51	479
Faridabad GPS (NTPC)(2*137.75+1*156)		432	0	0	0.00	0	
RGTPP (khardar) (IPP) (2*600)		1200	0	0	0.00	0	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	739	741	17.85	744	
<b>Thermal (Total)</b>		<b>4497</b>	<b>1200</b>	<b>1202</b>	<b>29.36</b>	<b>1223</b>	
Total Hydro		62	10	29	0.51	21	
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>1210</b>	<b>1231</b>	<b>29.86</b>	<b>1244</b>	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	1054	942	23.02	959
		suratgarh TPS (6*250)	1500	628	667	15.08	628
	Chabra TPS (4*250)	1000	860	873	21.12	880	
	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	116	161	3.66	152	
	RAPS A (NPC) (1*100+1*200)	300	169	169	4.24	177	
	Barsingsar (NLC) (2*125)	250	225	227	5.28	220	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	813	821	18.11	755	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	530	453	11.39	475	
	Kawai(Adani) (2*660)	1320	602	600	13.74	572	
	<b>Thermal (Total)</b>	<b>8876</b>	<b>4997</b>	<b>4913</b>	<b>115.63</b>	<b>4818</b>	
	Total Hydro	550	215	239	5.17	215	
	Wind power	4017	104	121	3.36	140	
	Biomass	99	21	21	0.49	21	
	Solar	1295	0	0	2.58	107	
	Renewable/Others (Total)	5411	125	142	6.43	268	
	<b>Total Rajasthan</b>	<b>14837</b>	<b>5337</b>	<b>5294</b>	<b>127.23</b>	<b>5301</b>	
UP	Anpara TPS (3*210+2*500)	1630	964	1231	26.70	1113	
	Obra TPS (2*50+2*94+5*200)	1194	267	296	6.70	279	
	Paricha TPS (2*110+2*220+2*250)	1160	712	577	16.40	683	
	Panki TPS (2*105)	210	153	135	3.40	142	
	Harduaganj TPS (1*60+1*105+2*250)	665	446	306	9.40	392	
	Tanda TPS (NTPC) (4*110)	440	276	210	6.25	260	
	Roza TPS (IPP) (4*300)	1200	1099	756	23.30	971	
	Anpara-C (IPP) (2*600)	1200	1004	986	23.00	958	
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	405	282	7.80	325	
	Anpara-D(2*500)	1000	454	450	10.90	454	
	Lalitpur TPS(3*660)	1980	0	0	0.00	0	
	Bara(2*660)	1320	581	575	13.90	579	
	<b>Thermal (Total)</b>	<b>12449</b>	<b>6361</b>	<b>5804</b>	<b>147.75</b>	<b>6156</b>	
	Vishnuparyag HPS (IPP)(4*110)	440	117	112	2.70	113	
	Alaknada(4*82.5)	330	80	75	1.70	71	
	Other Hydro	527	273	108	3.77	157	
	Cogeneration	981	200	200	4.80	200	
	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>7031</b>	<b>6299</b>	<b>160.72</b>	<b>6696</b>	
	Uttarakhand	Other Hydro	1250	616	158	7.90	329
Total Gas		225	30	101	1.57	65	
Wind Power		0	0	0	0.00	0	
Biomass		127	18	15	0.39	16	
Solar		20	0	0	0.05	2	
Small Hydro (< 25 MW)		180	0	0	0.00	0	
<b>Renewable(Total)</b>		<b>327</b>	<b>18</b>	<b>15</b>	<b>0.45</b>	<b>19</b>	
<b>Total Uttarakhand</b>		<b>1802</b>	<b>664</b>	<b>274</b>	<b>9.92</b>	<b>413</b>	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.01	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	78	77	1.93	80	
	Pragati Gas Turbine (2x104+ 1x122)	330	265	265	6.39	266	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	250	280	6.03	251	
	Badarpur TPS (NTPC) (3*95+2*210)	705	0	0	0.00	0	
	<b>Thermal (Total)</b>	<b>2917</b>	<b>593</b>	<b>622</b>	<b>14.33</b>	<b>597</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>593</b>	<b>622</b>	<b>14.33</b>	<b>597</b>		

HP	Baspa HPS (IPP) (3*100)	300	0	0	1.44	60
	Malana HPS (IPP) (2*43)	86	44	0	0.32	13
	Other Hydro	372	121	58	2.49	104
	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	86	78	1.94	81
	<b>Renewable(Total)</b>	<b>486</b>	<b>86</b>	<b>78</b>	<b>1.94</b>	<b>81</b>
	<b>Total HP</b>	<b>1244</b>	<b>252</b>	<b>136</b>	<b>6.18</b>	<b>258</b>
	J & K	Baglihar HPS (IPP) (3*150+3*150)	900	293	143	4.33
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>431</b>	<b>236</b>	<b>7</b>	<b>296</b>
<b>Total State Control Area Generation</b>		<b>50078</b>	<b>17184</b>	<b>15723</b>	<b>402.79</b>	<b>16783</b>
<b>J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]</b>		<b>6625</b>	<b>6332</b>	<b>170.66</b>	<b>7111</b>	
<b>Total Regional Availability(Gross)</b>	<b>75315</b>	<b>40995</b>	<b>30149</b>	<b>818.47</b>	<b>34103</b>	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	9369	969	68.48	2853
State Control Area Hydro	7163	2421	1552	44.09	1921
<b>Total Regional Hydro</b>	<b>19397</b>	<b>11790</b>	<b>2521</b>	<b>112.57</b>	<b>4774</b>

V. Total Renewable Generation:

Regional Entities Renewable	30	0	0	0.02	1
State Control Area Renewable	7356	241	247	9.08	378
<b>Total Regional Renewable</b>	<b>7386</b>	<b>241</b>	<b>247</b>	<b>9.10</b>	<b>379</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	
Vindhyhall(HVDC B/B)	-500	-500	0	500	0.00	11.92	-11.92
765 KV Gwalior-Agra (D/C)	1979	1623	2456	0	49.56	0.00	49.56
400 KV Zerda-Kankroli	-84	-70	81	172	0.00	1.34	-1.34
400 KV Zerda-Bhinmal	-19	17	226	180	0.79	0.00	0.79
220 KV Auraiya-Malanpur	-116	-117	0	144	0.00	2.22	-2.22
220 KV Badod-Kota/Morak	-59	-82	21	98	0.00	1.50	-1.50
Mundra-Mohindergarh(HVDC Bipole)	1802	1399	1804	0.00	37.46	0.00	37.46
400 KV RAPP-C-Sujalpur	0	0	0	0	0.00	0.00	0.00
400 KV Vindhyachal-Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	1296	1294	891	0	35.67	0.00	35.67
<b>Sub Total WR</b>	<b>4299</b>	<b>3564</b>			<b>123.49</b>	<b>16.97</b>	<b>106.52</b>
400 kV Sasaram - Varanasi	0	0	162	0	0.52	0.00	0.52
400 kV Sasaram - Allahabad	150	150	150	17	2.77	0.00	2.77
400 KV MZP- GKP (D/C)	-95	138	265	93	1.94	0.00	1.94
400 KV Patna-Balia(D/C) X 2	510	554	675	0	14.34	0.00	14.34
400 KV B'Sharif-Balia (D/C)	83	61	135	0	0.97	0.00	0.97
765 KV Gaya-Balia	181	243	290	0	5.68	0.00	5.68
765 KV Gaya-Varanasi (D/C)	300	454	633	0	11.18	0.00	11.18
220 KV Pusaui-Sahupuri	187	189	219	0	3.97	0.00	3.97
132 KV K'nasa-Sahupuri	0	-20	0	30	0.00	0.44	-0.44
132 KV Son Ngr-Rihand	-40	-35	0	46	0.00	0.86	-0.86
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-209	-149	19	268	0.00	2.53	-2.53
400 KV Barh -GKP (D/C)	460	488	564	0	11.50	0.00	11.50
400 kV B'Sharif - Varanasi (D/C)	127	27	76	127	0.00	0.80	-0.80
<b>Sub Total ER</b>	<b>1654</b>	<b>2100</b>			<b>52.87</b>	<b>4.63</b>	<b>48.23</b>
+/- 800 KV BiswanathCharialli-Agra	672	668	675	0.00	15.91	0.00	15.91
<b>Sub Total NER</b>	<b>672</b>	<b>668</b>			<b>15.91</b>	<b>0.00</b>	<b>15.91</b>
<b>Total IR Exch</b>	<b>6625</b>	<b>6332</b>			<b>192.26</b>	<b>21.60</b>	<b>170.66</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
45.66	1.50	47.16	1.76	-8.04	9.57	16.28	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
58.50	112.44	170.94	64.14	106.52	170.66	5.64	-5.92	-0.28

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	29	0	0	-0.13

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	0.02	4.54	47.16	72.84	17.05	5.63	0.01	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						
50.20	21.54	49.79	17.12	50.01	0.037	0.061	50.23	0.00	27.16

## 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	12:52	402	5:30	0.0	0.0	0.0	0.0	0.0
Gorakhpur	400	422	13:02	403	17:56	0.0	0.0	4.3	0.0	4.3
Bareilly(PG)400kV	400	421	0:04	395	10:49	0.0	0.0	1.7	0.0	1.7
Kanpur	400	419	0:45	398	10:49	0.0	0.0	0.0	0.0	0.0
Dadri	400	425	1:58	125	10:52	2.6	2.6	25.4	0.0	28.0
Ballabgarh	400	432	0:49	404	11:21	0.0	0.0	46.6	12.7	46.6
Bawana	400	429	1:58	409	11:21	0.0	0.0	42.3	0.0	42.3
Bassi	400	425	19:42	378	10:50	0.0	0.1	5.8	0.0	5.8
Hissar	400	423	1:58	403	6:25	0.0	0.0	13.4	0.0	13.4
Moga	400	426	0:04	407	11:20	0.0	0.0	28.1	0.0	28.1
Abdullapur	400	427	21:58	408	5:47	0.0	0.0	36.3	0.0	36.3
Nalagarh	400	436	2:02	412	6:55	0.0	0.0	53.5	25.7	53.5
Kishenpur	400	423	0:05	398	6:50	0.0	0.0	12.8	0.0	12.8
Wagoora	400	408	13:04	370	18:10	15.9	64.8	0.0	0.0	15.9
Amritsar	400	434	1:57	411	11:21	0.0	0.0	48.1	18.2	48.1
Kashipur	400	0	0:00	0	0:00	0.0	0.0	0.0	0.0	0.0
Hamirpur	400	428	23:21	407	11:20	0.0	0.0	24.0	0.0	24.0
Rishikesh	400	418	0:03	396	6:30	0.0	0.0	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	778	0:50	736	10:49	0.0	0.0	0.0	0.0	0.0
Balia	765	792	0:40	766	6:29	0.0	0.0	0.0	0.0	0.0
Moga	765	808	0:03	773	11:41	0.0	0.0	18.2	0.0	18.2
Agra	765	793	19:42	753	6:28	0.0	0.0	0.0	0.0	0.0
Bhiwani	765	809	1:59	773	11:21	0.0	0.0	28.5	0.0	28.5
Unnao	765	773	0:48	743	10:54	0.0	0.0	0.0	0.0	0.0
Lucknow	765	803	0:50	772	10:54	0.0	0.0	2.2	0.0	2.2
Meerut	765	810	20:02	758	6:38	0.0	0.0	5.5	0.0	5.5
Jhatikara	765	808	1:58	770	11:10	0.0	0.0	21.0	0.0	21.0
Bareilly 765 kV	765	796	0:50	759	10:56	0.0	0.0	0.0	0.0	0.0
Anta	765	803	1:58	769	9:43	0.0	0.0	11.0	0.0	11.0
Phagi	765	805	20:03	710	10:52	0.1	0.1	1.3	0.0	1.4

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	497.10	983.40	508.05	1455.60	188.87	357.78
Pong	426.72	384.05	412.96	600.05	417.28	768.49	61.31	265.50
Tehri	829.79	740.04	820.35	1009.66	815.00	902.26	45.01	140.00
Koteswar	612.50	598.50	610.56	4.90	609.91	4.44	140.00	146.33
Chamera-I	760.00	748.75	759.65	0.00	0.00	0.00	51.56	54.20
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	511.43	2.94	508.02	3.73	57.66	112.38

\* 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	-338	1	0	-338	0	0	-11.36	0.01	-11.35
Delhi	-107	-537	0	-230	-81	0	-6.32	-2.14	-8.46
Haryana	-627	303	0	-315	291	0	-10.19	5.70	-4.50
HP	243	84	0	71	-114	0	5.07	-0.49	4.59
J&K	350	0	0	443	-15	0	9.48	-0.12	9.37
CHD	-30	0	0	-30	0	0	-0.36	0.07	-0.29
Rajasthan	201	511	0	-7	507	0	8.36	16.72	25.09
UP	129	0	0	-95	-100	0	-5.59	5.01	-0.58
Uttarakhand	146	98	0	178	-71	0	3.71	3.07	6.78
Total	-33	461	0	-323	416	0	-7.20	27.84	20.64

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-338	-703	1	0	0	0
Delhi	-107	-421	301	-541	0	0
Haryana	-315	-630	305	-123	0	0
HP	341	71	282	-577	0	0
J&K	443	347	0	-15	0	0
CHD	0	-30	0	0	14	-20
Rajasthan	659	-7	1471	494	0	0
UP	176	-644	485	-100	0	0
Uttarakhand	178	146	354	-225	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>100.00%</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	21
Haryana	1	19
Rajasthan	0	9
Delhi	4	32
UP	2	20
Uttarakhand	3	30
HP	3	40
J & K	2	17
Chandigarh	3	32

**XIII. System Constraints:****XIV. Grid Disturbance / Any Other Significant Event:****XV. Weather Conditions For 15.11.2016 :**

Normal

**XVI. Synchronisation of new generating units :****XVII. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / /substation :**

1. 400kV RAPP-C (NR) –Sujalpur(WR) ckt-2 first time synchronized with grid at 16.47 hrs on dt. 15.11.2016.

**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.

Report for : 15.11.2016

पारी प्रभारी अभियंता / SHIFT CHARGE ENGINEER