

# 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 20.11.2016

Date of Reporting : 21.11.2016



### 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
34021	436	34457	50.10	28170	355	28525	0.00	764.62	11.42

\* 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	29.01	8.75	1.68	39.44	44.68	42.06	-2.62	81.50	0.00
Haryana	21.67	0.42	0.00	22.09	78.81	72.47	-6.34	94.56	0.00
Rajasthan	104.02	4.53	15.31	123.87	72.25	73.18	0.92	197.05	1.20
Delhi	14.46		0.00	14.46	36.43	38.01	1.58	52.47	0.09
UP	158.02	6.73	0.00	164.75	84.28	82.94	-1.34	247.69	1.06
Uttarakhand		7.73	0.00	13.99	16.44	15.61	-0.83	29.61	0.00
HP		3.97	1.76	5.73	17.00	16.84	-0.17	22.56	0.00
J & K		5.45	0.00	5.45	35.84	30.83	-5.01	36.28	9.07
Chandigarh				0.00	3.03	2.90	-0.13	2.90	0.00
<b>Total</b>	<b>327.17</b>	<b>37.58</b>	<b>18.75</b>	<b>389.77</b>	<b>388.77</b>	<b>374.85</b>	<b>-13.93</b>	<b>764.62</b>	<b>11.42</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	3360	0	-855	-455	2669	0	59	-443	4132	8:00	0
Haryana	3287	0	-2144	-61	2923	0	1	-292	5342	7:00	0
Rajasthan	8457	0	204	498	7832	0	-147	719	9618	8:00	0
Delhi	2650	0	16	-353	1418	0	99	-651	2925	12:00	0
UP	11803	0	-452	-80	9976	0	-113	119	11803	19:00	0
Uttarakhand	1432	0	-208	166	1117	0	-50	294	1596	7:00	0
HP	1137	0	7	35	732	0	-22	400	1234	9:00	0
J&K	1744	436	-240	332	1422	355	-123	355	1744	19:00	436
Chandigarh	152	0	-47	-30	82	0	2	-30	163	9:00	0
<b>Total</b>	<b>34021</b>	<b>436</b>	<b>-3718</b>	<b>51</b>	<b>28170</b>	<b>355</b>	<b>-295</b>	<b>471</b>	<b>35859</b>	<b>7:00</b>	<b>393</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	UI Net MU	Diversity is 1.08
									UI (DG:(+ve), UG: (-ve))
<b>A. NTPC</b>									
Singrauli STPS (5*200+2*500)	2000	1840	1965	1780	43.02	1793	42.78	0.24	
Rihand I STPS (2*500)	1000	834	762	660	17.03	710	17.12	-0.08	
Rihand II STPS (2*500)	1000	963	913	770	20.35	848	20.39	-0.04	
Rihand III STPS (2*500)	1000	963	973	796	20.22	842	20.20	0.02	
Dadri I STPS (4*210)	840	815	154	150	3.54	147	3.59	-0.05	
Dadri II STPS (2*490)	980	980	373	339	8.69	362	9.25	-0.56	
Unchahar I TPS (2*210)	420	360	271	261	6.33	264	6.76	-0.43	
Unchahar II TPS (2*210)	420	404	283	294	7.09	295	7.72	-0.63	
Unchahar III TPS (1*210)	210	202	142	143	3.24	135	3.50	-0.26	
ISTPP (Jhajjar) (3*500)	1500	1440	602	614	14.31	596	14.51	-0.20	
Dadri GPS (4*130.19+2*154.51)	830	803	265	302	7.89	329	8.35	-0.46	
Anta GPS (3*88.71+1*153.2)	419	407	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	0.01	1	0.02	0.00	
Unchahar Solar(10)	10	2	0	0	0.04	2	0.04	-0.01	
Singrauli Solar(15)	15	2	0	0	0.06	2	0.06	0.00	
KHEP(4*200)	800	645	627	632	3.03	126	2.80	0.23	
<b>Sub Total (A)</b>	<b>12112</b>	<b>11284</b>	<b>7330</b>	<b>6741</b>	<b>155</b>	<b>6452</b>	<b>157</b>	<b>-2.25</b>	
<b>B. NPC</b>									
NAPS (2*220)	440	409	433	445	9.80	408	9.82	-0.01	
RAPS- B (2*220)	440	383	424	426	9.17	382	9.19	-0.02	
RAPS- C (2*220)	440	225	236	236	4.99	208	5.40	-0.41	
<b>Sub Total (B)</b>	<b>1320</b>	<b>1017</b>	<b>1093</b>	<b>1107</b>	<b>23.96</b>	<b>998</b>	<b>24.41</b>	<b>-0.45</b>	
<b>C. NHPC</b>									
Chamera I HPS (3*180)	540	540	210	0	1.99	83	1.80	0.19	
Chamera II HPS (3*100)	300	201	207	0	1.58	66	1.50	0.08	
Chamera III HPS (3*77)	231	231	148	0	0.79	33	0.70	0.09	
Bairasuli HPS(3*60)	180	120	121	0	0.62	26	0.58	0.05	
Salal-HPS (6*115)	690	111	305	30	3.13	131	2.67	0.46	
Tanakpur-HPS (3*31.4)	94	32	31	40	0.87	36	0.76	0.11	
Uri-I HPS (4*120)	480	74	230	20	1.91	80	1.78	0.13	
Uri-II HPS (4*60)	240	54	40	81	1.34	56	1.29	0.05	
Dhauliganga-HPS (4*70)	280	210	205	0	1.24	52	1.16	0.09	
Dulhasti-HPS (3*130)	390	383	261	0	3.82	159	3.90	-0.08	
Sewa-II HPS (3*40)	120	80	82	0	0.22	9	0.25	-0.03	
Parbati 3 (4*130)	520	200	218	0	0.62	26	0.57	0.05	
<b>Sub Total (C)</b>	<b>4065</b>	<b>2235</b>	<b>2058</b>	<b>171</b>	<b>18</b>	<b>756</b>	<b>17</b>	<b>1.19</b>	
<b>D.SJVNL</b>									
NJPC (6*250)	1500	1605	1608	0	7.56	315	7.50	0.06	
Rampur HEP (6*68.67)	412	439	379	0	2.02	84	2.03	-0.01	
<b>Sub Total (D)</b>	<b>1912</b>	<b>2044</b>	<b>1987</b>	<b>0</b>	<b>9.57</b>	<b>399</b>	<b>9.52</b>	<b>0.05</b>	
<b>E. THDC</b>									
Tehri HPS (4*250)	1000	1075	1060	0	6.65	277	6.40	0.25	
Koteshwar HPS (4*100)	400	91	124	91	2.27	94	2.19	0.08	
<b>Sub Total (E)</b>	<b>1400</b>	<b>1166</b>	<b>1184</b>	<b>91</b>	<b>8.91</b>	<b>371</b>	<b>8.59</b>	<b>0.32</b>	
<b>F. BBMB</b>									
Bhakra HPS (2*108+3*126+5*157)	1379	549	1018	396	13.46	561	13.18	0.28	
Dehar HPS (6*165)	990	158	495	145	3.84	160	3.79	0.05	
Pong HPS (6*66)	396	169	330	66	4.05	169	4.06	-0.01	
<b>Sub Total (F)</b>	<b>2765</b>	<b>876</b>	<b>1843</b>	<b>607</b>	<b>21.34</b>	<b>889</b>	<b>21.02</b>	<b>0.32</b>	
<b>G. IPP(s)/JV(s)</b>									
ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	97	0	0.56	23	0.53	0.02	
KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	825	0	4.31	179	4.15	0.16	
Malana Stg-II HPS (2*50)	100	0	0	0	0.32	13	0.29	0.02	
Shree Cement TPS (2*150)	300	0	-1	-1	-0.04	-1	0.00	-0.04	
Budhil HPS(IPP) (2*35)	70	0	0	0	0.23	10	0.23	0.00	
<b>Sub Total (G)</b>	<b>1662</b>	<b>0</b>	<b>921</b>	<b>-1</b>	<b>5.37</b>	<b>224</b>	<b>5.21</b>	<b>0.17</b>	
<b>H. Total Regional Entities (A-G)</b>	<b>25237</b>	<b>18622</b>	<b>16417</b>	<b>8716</b>	<b>242.14</b>	<b>10089</b>	<b>242.79</b>	<b>-0.65</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	-0.07	-3	
	Goindwal(GVK) (2*270)	540	0	0	-0.02	-1	
	Rajpura (2*700)	1400	360	380	12.25	511	
	Talwandi Saboo (3*660)	1980	616	308	16.98	708	
	<b>Thermal (Total)</b>	<b>6560</b>	<b>976</b>	<b>688</b>	<b>29.01</b>	<b>1209</b>	
	Total Hydro	1000	371	349	8.75	365	
	Wind Power	0	0	0	0.00	0	
	Biomass	288	60	60	1.43	60	
	Solar	560	0	0	0.24	10	
	<b>Renewable(Total)</b>	<b>848</b>	<b>60</b>	<b>60</b>	<b>1.68</b>	<b>70</b>	
	<b>Total Punjab</b>	<b>8408</b>	<b>1407</b>	<b>1097</b>	<b>39.44</b>	<b>1643</b>	
	Haryana	Panipat TPS (2*210+2*250)	920	0	0	0.00	0
		DCRTPP (Yamuna nagar) (2*300)	600	461	461	11.42	476
Faridabad GPS (NTPC)(2*137.75+1*156)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	0	0	0.00	0	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	370	368	10.25	427	
<b>Thermal (Total)</b>		<b>4497</b>	<b>831</b>	<b>829</b>	<b>21.67</b>	<b>903</b>	
Total Hydro		62	14	10	0.42	18	
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>845</b>	<b>839</b>	<b>22.09</b>	<b>920</b>	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	986	957	23.55	981
		suratgarh TPS (6*250)	1500	403	417	10.10	421
	Chabra TPS (4*250)	1000	625	674	14.98	624	
	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	157	164	3.92	163	
	RAPS A (NPC) (1*100+1*200)	300	166	164	4.19	175	
	Barsingsar (NLC) (2*125)	250	112	112	2.61	109	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	831	824	18.19	758	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	575	601	12.81	534	
	Kawai(Adani) (2*660)	1320	601	603	13.68	570	
	<b>Thermal (Total)</b>	<b>8876</b>	<b>4456</b>	<b>4516</b>	<b>104.02</b>	<b>4334</b>	
	Total Hydro	550	212	212	4.53	189	
	Wind power	4017	264	594	11.99	499	
	Biomass	99	20	20	0.49	20	
	Solar	1295	5	0	2.84	118	
	Renewable/Others (Total)	5411	289	614	15.31	638	
<b>Total Rajasthan</b>	<b>14837</b>	<b>4957</b>	<b>5342</b>	<b>123.87</b>	<b>5161</b>		
UP	Anpara TPS (3*210+2*500)	1630	1185	1177	27.32	1139	
	Obra TPS (2*50+2*94+5*200)	1194	306	295	6.98	291	
	Paricha TPS (2*110+2*220+2*250)	1160	578	580	13.96	582	
	Panki TPS (2*105)	210	63	68	1.48	62	
	Harduaganj TPS (1*60+1*105+2*250)	665	334	311	8.22	342	
	Tanda TPS (NTPC) (4*110)	440	272	199	5.73	239	
	Roza TPS (IPP) (4*300)	1200	801	567	15.40	642	
	Anpara-C (IPP) (2*600)	1200	995	972	23.33	972	
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	282	282	7.10	296	
	Anpara-D(2*500)	1000	455	439	10.86	453	
	Lalitpur TPS(3*660)	1980	358	358	9.40	392	
	Bara(2*660)	1320	572	592	13.84	577	
	<b>Thermal (Total)</b>	<b>12449</b>	<b>6201</b>	<b>5840</b>	<b>143.62</b>	<b>5984</b>	
	Vishnuparyag HPS (IPP)(4*110)	440	112	112	2.69	112	
	Alaknada(4*82.5)	330	150	75	1.68	70	
	Other Hydro	527	44	118	2.37	99	
	Cogeneration	981	600	600	14.40	600	
	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>7107</b>	<b>6745</b>	<b>164.75</b>	<b>6865</b>	
	Uttarakhand	Other Hydro	1250	549	199	7.73	322
Total Gas		225	242	296	6.22	259	
Wind Power		0	0	0	0.00	0	
Biomass		127	0	0	0.00	0	
Solar		20	0	0	0.04	2	
Small Hydro (< 25 MW)		180	0	0	0.00	0	
<b>Renewable(Total)</b>		<b>327</b>	<b>0</b>	<b>0</b>	<b>0.04</b>	<b>2</b>	
<b>Total Uttarakhand</b>		<b>1802</b>	<b>791</b>	<b>495</b>	<b>13.99</b>	<b>583</b>	
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	77	77	1.92	80	
	Pragati Gas Turbine (2x104+ 1x122)	330	263	264	6.44	268	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	251	280	6.19	258	
	Badarpur TPS (NTPC) (3*95+2*210)	705	-4	-4	-0.09	-4	
	<b>Thermal (Total)</b>	<b>2917</b>	<b>587</b>	<b>617</b>	<b>14.46</b>	<b>602</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>587</b>	<b>617</b>	<b>14.46</b>	<b>602</b>		

HP	Baspa HPS (IPP) (3*100)	300	0	0	1.35	56
	Malana HPS (IPP) (2*43)	86	45	0	0.34	14
	Other Hydro	372	97	46	2.28	95
	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	81	69	1.76	73
	<b>Renewable(Total)</b>	<b>486</b>	<b>81</b>	<b>69</b>	<b>1.76</b>	<b>73</b>
	<b>Total HP</b>	<b>1244</b>	<b>223</b>	<b>115</b>	<b>5.73</b>	<b>239</b>
	J & K	Baglihar HPS (IPP) (3*150+3*150)	900	201	88	2.68
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>339</b>	<b>181</b>	<b>5</b>	<b>227</b>
<b>Total State Control Area Generation</b>		<b>50078</b>	<b>16256</b>	<b>15431</b>	<b>389.77</b>	<b>16241</b>
<b>J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]</b>		<b>4787</b>	<b>4989</b>	<b>165.73</b>	<b>6905</b>	
<b>Total Regional Availability(Gross)</b>	<b>75315</b>	<b>37460</b>	<b>29137</b>	<b>797.65</b>	<b>33235</b>	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	8621	1501	66.18	2757
State Control Area Hydro	7163	2256	1667	39.35	1900
<b>Total Regional Hydro</b>	<b>19397</b>	<b>10877</b>	<b>3168</b>	<b>105.52</b>	<b>4658</b>

V. Total Renewable Generation:

Regional Entities Renewable	30	0	0	0.11	5
State Control Area Renewable	7356	429	743	18.79	783
<b>Total Regional Renewable</b>	<b>7386</b>	<b>429</b>	<b>743</b>	<b>18.90</b>	<b>787</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	12.10	-12.10
765 KV Gwalior-Agra (D/C)	1654	1718	2217	0	44.45	0.00	44.45
400 KV Zerda-Kankroli	-35	-61	71	125	0.00	0.83	-0.83
400 KV Zerda-Bhinmal	12	-26	225	119	0.41	0.00	0.41
220 KV Auraiya-Malanpur	-88	-99	0	109	0.00	2.31	-2.31
220 KV Badod-Kota/Morak	-86	-96	6	103	0.00	1.86	-1.86
Mundra-Mohindergarh(HVDC Bipole)	1175	874	1303	0.00	25.99	0.00	25.99
400 KV RAPP- Sujalpur	200	160	380	0	5.57	0.00	5.57
400 KV Vindhyachal-Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	1159	1380	889	0	37.80	0.00	37.80
<b>Sub Total WR</b>	<b>3491</b>	<b>3350</b>			<b>114.21</b>	<b>17.11</b>	<b>97.11</b>
400 kV Sasaram - Varanasi	-144	-147	157	0	5.31	0.00	5.31
400 kV Sasaram - Allahabad	3	-5	33	12	0.12	0.00	0.12
400 KV MZP- GKP (D/C)	-75	188	286	75	3.35	0.00	3.35
400 KV Patna-Balia(D/C) X 2	502	564	676	0	14.16	0.00	14.16
400 KV B'Sharif-Balia (D/C)	-56	67	148	56	1.74	0.00	1.74
765 KV Gaya-Balia	173	236	311	0	6.09	0.00	6.09
765 KV Gaya-Varanasi (D/C)	-285	-401	608	0	11.38	0.00	11.38
220 KV Pusauli-Sahupuri	198	146	198	0	3.53	0.00	3.53
132 KV K'nasa-Sahupuri	-20	-26	0	28	0.00	0.53	-0.53
132 KV Son Ngr-Rihand	-40	-33	0	45	0.00	0.85	-0.85
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-222	-99	69	226	0.00	1.93	-1.93
400 KV Barh -GKP (D/C)	464	446	490	0	10.52	0.00	10.52
400 kV B'Sharif - Varanasi (D/C)	122	33	109	122	0.00	0.36	-0.36
<b>Sub Total ER</b>	<b>620</b>	<b>969</b>			<b>56.19</b>	<b>3.67</b>	<b>52.52</b>
+/- 800 KV BiswanathCharialli-Agra	676	670	684	0.00	16.10	0.00	16.10
<b>Sub Total NER</b>	<b>676</b>	<b>670</b>			<b>16.10</b>	<b>0.00</b>	<b>16.10</b>
<b>Total IR Exch</b>	<b>4787</b>	<b>4989</b>			<b>186.50</b>	<b>20.77</b>	<b>165.73</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
44.52	1.32	45.85	-1.13	-7.93	10.34	8.37	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
55.05	108.64	163.70	68.62	97.11	165.73	13.57	-11.54	2.03

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	27	0	0	29	0	0	-0.11

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	0.00	5.59	45.06	69.79	17.71	6.93	0.06	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	22.01	49.82	15.53	50.00	0.043	0.066	0.00	0.00	30.21

## 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	496.55	960.37	507.59	1426.07	193.38	385.05
Pong	426.72	384.05	412.54	577.87	416.81	743.22	59.89	257.29
Tehri	829.79	740.04	819.45	991.27	813.90	882.26	43.79	148.00
Koteswar	612.50	598.50	610.36	4.71	610.89	4.95	148.00	149.25
Chamera-I	760.00	748.75	759.58	0.00	0.00	0.00	50.85	53.49
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	510.76	2.93	506.81	3.79	61.78	120.02

\* 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	-444	2	0	-455	0	0	-13.42	0.02	-13.40
Delhi	-210	-440	0	-333	-20	0	-8.80	-3.04	-11.84
Haryana	-596	304	0	-295	234	0	-9.53	5.57	-3.97
HP	292	108	0	199	-164	0	7.74	-0.83	6.91
J&K	355	0	0	332	0	0	9.07	0.00	9.07
CHD	-30	0	0	-30	0	0	-0.36	0.00	-0.36
Rajasthan	208	511	0	0	498	0	8.54	16.31	24.85
UP	119	0	0	-80	0	0	-7.29	-0.04	-7.33
Uttarakhand	146	147	0	146	20	0	3.71	2.81	6.52
Total	-160	631	0	-517	567	0	-10.36	20.81	10.45

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-444	-715	2	0	0	0
Delhi	-210	-524	217	-445	0	0
Haryana	-284	-612	310	-110	0	0
HP	439	199	108	-627	0	0
J&K	462	306	0	0	0	0
CHD	0	-30	0	0	0	0
Rajasthan	666	0	1454	475	0	0
UP	146	-849	0	-50	0	0
Uttarakhand	183	146	239	-13	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

WR	0.00%
ER	0.00%
Simultaneous	0.00%

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

WR	0.00%
ER	0.00%
Simultaneous	0.00%

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

Rihand - Dadri	0.00%
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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	2	22
Haryana	2	23
Rajasthan	1	15
Delhi	5	55
UP	1	15
Uttarakhand	4	34
HP	3	33
J & K	2	22
Chandigarh	5	39

**XIII. System Constraints:**

XIV. Grid Disturbance / Any Other Significant Event:

XV. Weather Conditions For 20.11.2016 :  
Normal

XVI. Synchronisation of new generating units :

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

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 : 20.11.2016

पारी प्रभारी अभियंता / SHIFT CHARGE ENGINEER