

पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पावरसिस्ट की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GO1188682

Power Supply Position in Northern Region for 16.10.2015

Date of Reporting : 17.10.2015

I. Regional Availability/Demand:

Evening Peak (20:00 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
43229	2275	45504	50.06	35627	1370	36997	50.09	925.6	49.83

* 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	52.27	10.05		62.32	54.47	53.80	-0.67	116.11	0.00
Haryana	68.34	0.55		68.89	69.26	70.15	0.89	139.04	0.00
Rajasthan	135.48	4.30	3.77	143.55	64.63	65.74	1.11	209.29	0.26
Delhi	14.11			14.11	74.65	72.36	-2.28	86.47	0.06
UP	150.18	10.90		161.08	110.51	111.59	1.08	272.67	40.43
Uttarakhand		14.58		14.58	17.43	20.72	3.30	35.30	0.00
HP		9.58		9.58	13.93	14.74	0.80	24.32	0.00
J & K		11.05	0.00	11.05	26.68	27.34	0.66	38.39	9.08
Chandigarh				0.00	4.32	4.02	0.27	4.02	0.00
Total	420.37	61.01	3.77	485.15	435.88	440.46	5.16	925.61	49.83

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

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

State	Evening Peak (20:00 Hrs) MW				Off Peak (03:00 Hrs) MW				# Max(hourly) Demand Met of Day (MW)
	Demand Met	Shortage	UI	STOA/PX transaction	Demand Met	Shortage	UI	STOA/PX transaction	
Punjab	5343	0	-158	-27	4249	0	45	-66	5343
Haryana	7232	0	-83	5	4496	0	50	23	7232
Rajasthan	9020	0	102	623	8988	0	243	708	9562
Delhi	4170	6	-122	289	3218	0	-87	60	4170
UP	12476	1775	-257	95	11066	1130	-174	241	12476
Uttarakhand	1660	0	34	246	1297	0	146	197	1764
HP	1159	0	-62	-481	831	0	188	13	1286
J&K	1975	494	51	158	1361	240	-28	123	2037
Chandigarh	195	0	-46	0	121	0	1	0	211
Total	43229	2275	-541	907	35627	1370	384	1298	43229

* STOA figures are at sellers boundary & PX figures are at regional boundary.

figures may not be at simultaneous hour.

Diversity is 1.02

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 (OG:(+ve), UG: (-ve))	
								Net MU	Net MU
A. NTPC									
Singrauli STPS (5*200+2*500)	2000	1471	1565	1552	35.94	1497	34.85	1.09	
Rihand I STPS (2*500)	1000	860	859	943	20.46	853	20.24	0.22	
Rihand II STPS (2*500)	1000	661	509	1011	15.52	647	15.44	0.08	
Rihand III STPS (2*500)	1000	480	508	524	11.53	480	11.34	0.19	
Dadri I STPS (4*210)	840	800	507	464	10.70	446	10.89	-0.19	
Dadri II STPS (2*490)	980	970	867	687	17.39	724	18.34	-0.95	
Uncharhar I TPS (2*210)	420	200	196	192	4.31	179	4.42	-0.11	
Uncharhar II TPS (2*210)	420	400	405	314	7.99	333	8.18	-0.18	
Uncharhar III TPS (1*220)	210	200	168	162	3.78	158	3.87	-0.09	
ISTPP (Jhajjar) (3*500)	1500	1436	924	635	16.13	672	16.58	-0.45	
Dadri GPS (4*130.19+2*154.51)	830	672	291	296	7.97	332	8.20	-0.23	
Anta GPS (3*88.71+1*153.2)	419	409	0	0	0.00	0	0.00	0.00	
Auraiya GPS (4*111.19+2*109.30)	663	527	268	248	6.24	260	6.29	-0.05	
Dadri Solar	5	1	0	0	0.02	1	0.02	-0.01	
Uncharhar Solar	10	3	0	0	0.03	1	0.06	-0.04	
Singrauli Solar	15	3	0	0	0.04	2	0.08	-0.04	
KHEP	800	850	800	0	6.44	268	6.00	0.45	
Sub Total (A)	12112	9942	7867	7028	164	6853	165	0	
B. NPC									
NAPS (2*220)	440	389	427	435	9.32	388	9.34	-0.02	
RAPS- B (2*220)	440	396	438	443	9.45	394	9.50	-0.06	
RAPS- C (2*220)	440	206	225	231	4.79	200	4.94	-0.15	
Sub Total (B)	1320	991	1090	1109	23.56	982	23.78	-0.23	
C. NHPC									
Chamera I HPS (3*180)	540	540	365	0	1.78	74	1.70	0.08	
Chamera II HPS (3*100)	300	300	303	0	2.79	116	2.61	0.18	
Chamera III HPS (3*77)	231	229	230	0	1.78	74	1.59	0.20	
Bairasuli HPS(3*60)	180	179	121	0	0.86	36	0.77	0.08	
Saikal-HPS (6*115)	690	264	318	325	7.09	295	6.30	0.79	
Tanakpur-HPS (3*40)	94	51	43	61	1.36	57	1.24	0.12	
Uri-I HPS (4*120)	480	199	309	244	5.49	229	4.79	0.70	
Uri-II HPS (4*60)	240	124	183	122	3.16	132	2.99	0.18	
Dhauliganga-HPS (4*70)	280	280	282	0	1.88	78	1.70	0.19	
Dulhasti-HPS (3*130)	390	257	265	262	6.30	262	6.17	0.13	
Sewa-II HPS (3*40)	120	119	127	0	1.02	42	0.65	0.37	
Parbati 3 (4*130)	520	282	129	0	0.81	34	0.85	-0.04	
Sub Total (C)	4065	2825	2675	1015	34	1429	31	3	
D.SJVNL									
NJPC (6*250)	1500	1605	1417	0	14.71	613	14.46	0.25	
Rampur HEP (6*68.67)	412	432	391	0	4.22	176	4.02	0.19	
Sub Total (D)	1912	2037	1808	0	18.93	789	18.49	0.44	
E. THDC									
Tehri HPS (4*250)	1000	1080	911	0	7.67	319	7.50	0.17	
Koteshwar HPS (4*100)	400	104	90	90	2.58	108	2.50	0.08	
Sub Total (E)	1400	1184	1001	90	10.25	427	10.00	0.25	
F. BBMB									
Bhakra HPS (2*108+3*126+5*157)	1379	622	1048	531	15.18	633	14.92	0.26	
Dehar HPS (6*165)	990	273	660	160	6.56	273	6.56	0.00	
Pong HPS (6*66)	396	180	318	132	4.37	182	4.31	0.05	
Sub Total (F)	2765	1075	2026	823	26.10	1088	25.79	0.31	
G. IPP(s)/JV(s)									
ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	83	0	1.00	42	0.96	0.04	
KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	760	0	7.86	328	7.82	0.05	
Malana Stg-II HPS (2*50)	100	0	85	20	0.50	21	0.48	0.01	
Shree Cement TPS (2*150)	300	0	256	260	6.19	258	6.15	0.04	
Budhil HPS(IPP) (2*35)	70	0	75	0	0.04	2	0.45	-0.41	
Sub Total (G)	1662	0	1259	280	15.59	650	15.87	-0.27	
H. Total Regional Entities (A-G)	25237	18053	17726	10345	293.21	12217	290.05	3.16	

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	480	870	15.48	645
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	90	90	1.98	83
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	203	203	4.45	185
	Goindwal(GVK)		0	0	0.00	0
	Rajpura (2*700)	1400	854	705	22.99	958
	Talwandi Saboo (1*660)	660	352	341	7.36	307
	Thermal (Total)	4700	1979	2209	52.27	2178
Total Hydro	1000	421	408	10.05	419	
Total Punjab	5700	2400	2617	62.32	2596	
Haryana	Panipat TPS (4*110+2*210+2*250)	1367	660	609	14.67	611
	DCRTPP (Yamuna nagar) (2*300)	600	558	454	12.05	502
	Faridabad GPS (NTPC)	432	167	172	4.22	176
	RGTTP (khedar) (IPP) (2*600)	1200	1148	757	22.06	919
	Magnum Diesel (IPP)	25	0	0	0.00	0
	Jhajjar(CLP) (2*660)	1320	476	738	15.34	639
	Thermal (Total)	4944	3009	2730	68.34	2847
	Total Hydro	62	18	27	0.55	23
	Total Haryana	5006	3027	2757	68.89	2870
	Rajasthan	kota TPS (2*110+2*195+3*210)	1240	835	865	20.74
suratgarh TPS (6*250)		1500	768	684	18.36	765
Chabra TPS (4*250)		1000	374	412	9.40	392
Dholpur GPS (3*110)		330	41	103	1.41	59
Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)		271	211	215	5.24	218
RAPS A (NPC) (1*100+1*200)		300	157	160	3.89	162
Barsingar (NLC) (2*125)		250	170	170	3.89	162
Giral LTPS (2*125)		250	82	85	1.47	61
Rajwest LTPS (IPP) (8*135)		1080	617	822	18.50	771
VS LIGNITE LTPS (IPP) (1*135)		135	0	0	0.00	0
Kalisindh Thermal(2*600)		1200	945	1100	24.50	1021
Kawati(Adani) (2*660)		1320	1187	1224	28.09	1170
Thermal (Total)		8876	5387	5840	135	5645
Total Hydro		550	203	133	4.30	179
Wind power		3214	171	160	2.92	122
Biomass		99	0	0	0.54	23
Solar		730	0	0	0.30	13
Renewable/Others (Total)		4043	171	160	3.77	157
Total Rajasthan		13469	5761	6133	143.55	5981
UP		Anpara TPS (3*210+2*500)	1630	1370	1370	32.40
	Obra TPS (2*50+2*94+5*200)	1194	268	303	6.40	267
	Paricha TPS (2*110+2*220+2*250)	1140	628	639	15.10	629
	Panki TPS (2*105)	210	54	59	1.30	54
	Harduaganj TPS (1*60+1*105+2*250)	665	542	527	12.60	525
	Tanda TPS (NTPC) (4*110)	440	374	380	8.98	374
	Roza TPS (IPP) (4*300)	1200	1094	1112	26.60	1108
	Anpara-C (IPP) (2*600)	1200	1089	1087	25.90	1079
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	404	405	9.00	375
	Anpara-D(1*500)	500	0	0	0.00	0
	Lalitpur TPS(1*660)	660	390	392	9.50	396
	Thermal (Total)	9289	6213	6274	148	6157
	Vishnuparyag HPS (IPP)(4*110)	440	236	221	5.20	217
	Alakanada(4*82.5)	330	127	117	2.80	117
	Other Hydro	527	224	68	2.90	121
	Cogeneration	981	100	100	2.40	100
	Total UP	11567	6900	6780	161	6712
Uttarakhand	Total Hydro	1398	589	602	14.58	607
	Total Uttarakhand	1398	589	602	14.58	607
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0
	Delhi Gas Turbine (6x30 + 3x34)	282	37	36	0.92	38
	Pragati Gas Turbine (2x104+ 1x122)	330	148	152	3.60	150
	Rithala GPS (3*36)	95	0	0	0.00	0
	Bawana GPS (4*216+2*253)	1370	251	249	6.01	251
	Badarpur TPS (NTPC) (3*95+2*210)	705	165	165	3.59	150
	Thermal (Total)	2917	601	602	14.11	588
	Total Delhi	2917	601	602	14.11	588
HP	Baspa HPS (IPP) (3*100)	300	60	99	2.35	98
	Malana HPS (IPP) (2*43)	86	56	30	0.51	21
	Other Hydro	878	304	270	6.72	280
	Total HP	1264	420	399	9.58	399
J & K	Baglihar HPS (IPP) (3*150)	450	390	390	9.36	390
	Other Hydro/IPP	560	74	65	1.69	71
	Gas/Diesel/Others	190	0	0	0.00	0
	Total J & K	1200	464	455	11.05	461
Total State Control Area Generation		42521	20162	20345	485.15	20215
J. Net Inter Regional Exchange (Import +ve)/Export (-ve)]			6132	6741	173.47	7228
Total Regional Availability(Gross)		67758	44020	37431	951.84	39660

IV. Total Hydro Generation:

Regional Entities Hydro	12234	9238	1948	105.38	4391
State Control Area Hydro	6581	2702	2430	61	2542
Total Regional Hydro	18815	11940	4378	166.39	6933

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

Element	Peak(20:00 Hrs)		Off Peak(03:00 Hrs)		Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW		MW		Import	Export	Import	Export	
Vindhychal(HVDC B/B)	150		50		150	0	2.22	0.00	2.22
765 KV Gwalior-Agra (D/C)	2121		2170		3031	0	57.69	0.00	57.69
400 KV Zerda-Kankrol	-8		-81		76	91	0.00	0.58	-0.58
400 KV Zerda-Bhinmal	45		-25		145	78	0.67	0.00	0.67
220 KV Auraiya-Malanpur	-136		-164		0	177	0.00	3.08	-3.08
220 KV Badoh-Kota/Morak	1		-14		21	83	0.00	0.67	-0.67
Mundra-Mohindergarh(HVDC Bipole)	2501		2498		2506	0	60.42	0.00	60.42
400 KV Vindhychal - Rihand	0		0		0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	472		677		840	0	15.61	0.00	15.61
Sub Total WR	5146		5111				136.61	4.32	132.29
Pusauli Bypass/HVDC	400		400		400	0	9.08	0.00	9.08
400 KV MZP- GKP (D/C)	126		300		512	0	7.02	0.00	7.02
400 KV Patna-Balia(D/C) X 2	163		276		439	0	7.23	0.00	7.23
400 KV B'Shanif-Balia (D/C)	-22		74		207	54	2.02	0.00	2.02
765 KV Gaya-Balia	77		97		214	0	1.41	0.00	1.41
765 KV Gaya-Fatehpur	35		145		353	0	4.46	0.00	4.46
220 KV Pusauli-Sahupuri	180		145		200	0	3.93	0.00	3.93
132 KV K'nasa-Sahupuri	0		0		0	0	0.48	0.00	0.48
132 KV Son Ngr-Rihand	-23		-22		0	36	0.00	0.69	-0.69
132 KV Garhwa-Rihand	0		0		0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-170		-35		173	170	0.00	0.02	-0.02
400 KV Barh -GKP (D/C)	220		250		340	0	6.15	0.00	6.15
Sub Total ER	986		1630				41.78	0.71	41.08
+/- 800 KV BiswanathChariali-Agra	0		0		150	0	0.11	0.00	0.11
Sub Total NER	0		0				0.11	0.00	0.11
Total IR Exch	6132		6741				178.50	5.03	173.47

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

ER	ISGS/LT Schedule (MU)		Bilateral Schedule (MU)			Power Exchange Shdi (MU)		Wheeling (MU)	
	Bhutan	Total	Through ER	Through WR	Total	Through ER	Through WR	Through ER	Through WR
37.19	2.33	39.51	3.57	-8.52	14.62	17.45	1.87	-1.87	
Total IR Schedule (MU)			Total IR Actual (MU)			Net IR UI (MU)			
Through ER	Through WR Incids Mndra	Total	Through ER	Through WR	Total	Through ER	Through WR	Total	
59.58	98.67	158.25	41.08	132.29	173.36	-18.50	33.61	15.11	

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

Element	Peak(20:00 Hrs)		Off Peak(03:00 Hrs)		Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW		MW		Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	0		0		0	0	0	0	0.00

VI. 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	0.14	3.67	26.74	79.14	66.33	5.50	1.47	0.00	0.00

<----- Frequency (Hz) ----->

Maximum				Minimum				Average Frequency Hz	Frequency Variation Index	Std. Dev.	Frequency in 15 Min Block	
Freq	Time	Freq	Time	Hz	(Hz)	MIN (Hz)						
50.19	12.01	49.68	18.12	49.94	0.092	0.075	50.14	49.82				

VII. Voltage profile 400 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)			
		Voltage(KV)	Time	Voltage (KV)	Time	<380 kV	<390 kV	>420 kV	>430 kV
Rihand	400	406	08:01	399	23:13	0.0	0.0	0.0	0.0
Gorakhpur	400	414	10:00	399	18:15	0.0	0.0	0.0	0.0
Bareilly	400	413	02:58	393	18:16	0.0	0.0	0.0	0.0
Kanpur	400	411	08:03	401	18:16	0.0	0.0	0.0	0.0
Dadri	400	420	02:58	400	18:24	0.0	0.0	0.0	0.0
Ballabhgarh	400	424	02:57	403	18:12	0.0	0.0	12.0	0.0
Bawana	400	421	01:45	400	18:12	0.0	0.0	0.7	0.0
Bassi	400	419	04:00	399	11:38	0.0	0.0	0.0	0.0
Hissar	400	418	01:44	397	18:15	0.0	0.0	0.0	0.0
Moga	400	424	02:58	401	18:26	0.0	0.0	12.6	0.0
Abdullapur	400	424	01:44	395	18:15	0.0	0.0	11.4	0.0
Nalagarh	400	433	02:59	406	18:25	0.0	0.0	27.1	9.5
Kishenpur	400	427	02:59	400	18:41	0.0	0.0	20.9	0.0
Wagoora	400	414	02:56	376	18:51	6.4	20.6	0.0	0.0
Amritsar	400	429	02:59	405	11:35	0.0	0.0	24.4	0.0
Kashipur	400	418	03:00	408	18:13	0.0	0.0	0.0	0.0
Hamirpur	400	427	03:58	404	12:44	0.0	0.0	26.9	0.0
Rishikesh	400	409	03:01	378	18:20	0.1	23.9	0.0	0.0

VIII. Voltage profile 765 kV

Station	Voltage Level (kV)	Maximum		Minimum		Voltage (in % of Time)			
		Voltage(KV)	Time	Voltage (KV)	Time	<728 kV	<742 kV	>800 kV	>820 kV
Fatehpur	765	772	03:00	744	18:15	0.0	0.0	0.0	0.0
Balia	765	764	10:01	741	18:25	0.0	0.2	0.0	0.0
Moga	765	804	02:57	758	18:27	0.0	0.0	9.3	0.0
Agra	765	785	02:59	756	12:19	0.0	0.0	0.0	0.0
Bhiwani	765	799	01:44	763	18:25	0.0	0.0	0.0	0.0
Unnao	765	764	08:03	736	18:16	0.0	3.7	0.0	0.0
Lucknow	765	767	03:00	741	18:25	0.0	0.0	0.0	0.0
Meerut	765	809	02:59	763	18:27	0.0	0.0	9.9	0.0
Jhatikara	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Bareilly	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Anta	765	777	20:57	761	23:20	0.0	0.0	0.0	0.0
Phagi	765	781	04:00	752	18:29	0.0	0.0	0.0	0.0

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 ³ /s)	Usage (m ³ /s)
Bhakra	513.59	445.62	510.25	1560.04	508.62	1485.27	342.04	419.20
Pong	426.72	384.05	419.80	875.55	415.39	693.24	97.69	254.40
Tehri	829.79	740.04	819.80	1000.00	824.60	1100.00	124.52	171.00
Koteshwar	612.50	598.50	610.73	4.94	608.78	3.98	171.00	169.95
Chamera-I	760.00	748.75	757.44	0.00	0.00	0.00	83.68	48.49
Rihand	268.22	252.98	851.80	284.70	854.30	326.40	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	512.98	3.57	511.43	3.34	78.33	147.35

* NA: Not Available

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

State	Off- Peak Hours (03:00 Hrs)			Peak Hours (20:00 Hrs)			Day Energy (MU)		
	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MW)	IEX (MW)	PXIL (MW)	Bilateral (MU)	IEX / PXIL (MU)	Total (MU)
Punjab	-191	126	0	-196	169	0	-4.61	4.24	-0.37
Delhi	-246	306	0	-145	434	0	-3.44	11.64	8.20
Haryana	-233	256	0	-233	238	0	-5.59	5.18	-0.41
HP	-50	63	0	127	-608	0	1.34	-3.85	-2.51
J&K	133	-10	0	34	124	0	0.95	3.16	4.11
CHD	0	0	0	0	0	0	0.00	0.49	0.49
Rajasthan	-5	711	2	-5	626	2	1.63	17.05	18.67
UP	241	0	0	95	0	0	3.44	0.00	3.44
Uttarakhand	197	0	0	197	49	0	4.72	0.99	5.71
Total	-155	1452	2	-127	1032	2	-1.56	38.90	37.34

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-191	-196	236	117	0	0
Delhi	-70	-246	801	98	0	0
Haryana	-233	-233	269	-356	0	0
HP	127	-50	63	-709	0	0
J&K	133	-16	248	-25	0	0
CHD	0	0	59	0	0	0
Rajasthan	190	-5	1039	594	2	2
UP	273	19	0	0	0	0
Uttarakhand	197	197	159	-81	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 16.10.2015 :
Normal.

XIV. Synchronisation of new generating units :

XV. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / substation :
400 kV Karcham-Sorang and 400 kV Abdullapur-Sorang first time charged at 09:31 hrs and 23:53 hrs respectively on 16-10-2015. It is LILO of 400 kV Abdullapur-

XVI. Tripping of lines in pooling stations :

XVII. Complete generation loss in a generating station :