

पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पब्लिसिड की पूर्ण स्वामित्व प्राप्त सार्वजनिक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 30.08.2015
Date of Reporting : 31.08.2015

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
47157	2006	49163	49.87	46089	210	46300	50.00	1090.1	54.78

* 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	78.91	22.24		101.15	118.57	117.37	-1.19	218.52	0.00
Haryana	50.78	0.64		51.42	123.14	121.78	-1.36	173.19	0.00
Rajasthan	118.55	0.99	21.84	141.38	77.51	77.68	0.17	219.05	0.00
Delhi	14.02			14.02	86.38	86.15	-0.23	100.16	0.37
UP	135.98	12.80		148.78	134.00	131.54	-2.45	280.32	45.74
Uttarakhand		20.34		20.34	12.22	13.93	1.71	34.27	0.53
HP		23.00		23.00	1.14	1.94	0.80	24.94	0.03
J & K		14.74	0.00	14.74	18.81	19.55	0.73	34.29	8.12
Chandigarh				0.00	5.71	5.39	0.27	5.39	0.00
Total	398.23	94.75	21.84	514.81	577.47	575.32	-1.56	1090.14	54.78

* 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	9750	0	71	1560	8755	0	-203	1748	9751
Haryana	8188	0	48	1807	7702	0	88	1580	8393
Rajasthan	8468	0	-90	662	9533	0	90	1007	9909
Delhi	4199	7	-83	543	4375	0	79	679	4986
UP	11907	1600	-203	255	12112	0	-80	316	12706
Uttarakhand	1723	40	222	-69	1278	0	37	-225	1723
HP	1212	0	127	-1371	931	0	9	-1528	1212
J&K	1438	359	5	-243	1192	210	13	-906	1700
Chandigarh	272	0	14	0	211	0	-6	0	280
Total	47157	2006	111	3144	46089	210	27	2670	47973

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

III. Regional Entities :

Entity	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	
A. NTPC	Singrauli STPS (5*200+2*500)	2000	1865	2025	2037	45.27	1886	44.55	0.72	
	Rihand I STPS (2*500)	1000	892	942	967	20.82	868	20.77	0.06	
	Rihand II STPS (2*500)	1000	953	827	1037	22.16	923	21.67	0.48	
	Rihand III STPS (2*500)	1000	387	0	514	8.71	363	9.08	-0.37	
	Dadri I STPS (4*210)	840	600	396	345	8.40	350	8.81	-0.41	
	Dadri II STPS (2*490)	980	970	801	820	17.78	741	19.10	-1.33	
	Unchahar I TPS (2*210)	420	400	409	428	8.95	373	9.20	-0.25	
	Unchahar II TPS (2*210)	420	400	398	439	8.69	362	8.79	-0.11	
	Unchahar III TPS (1*220)	210	200	200	212	4.42	184	4.54	-0.12	
	ISTPP (Jhajjar) (3*500)	1500	1436	640	691	15.18	632	15.23	-0.05	
	Dadri GPS (4*130.19+2*154.51)	830	800	384	328	8.77	366	9.08	-0.31	
	Anta GPS (3*88.71+1*153.2)	419	396	226	234	5.55	231	5.50	0.05	
	Auraiya GPS (4*111.19+2*109.30)	663	635	299	175	6.18	258	6.34	-0.16	
	Dadri Solar	5	1	0	0	0.02	1	0.03	0.00	
	Unchahar Solar	10	3	0	0	0.03	1	0.06	-0.03	
	Singrauli Solar	15	3	0	0	0.05	2	0.08	-0.03	
	KHEP	800	845	846	699	18.39	766	18.18	0.21	
	Sub Total (A)	12112	10786	8393	8926	199	8307	201	-2	
	B. NPC	NAPS (2*220)	440	373	404	413	8.85	369	8.95	-0.10
		RAPS- B (2*220)	440	185	209	210	4.44	185	4.44	0.00
RAPS- C (2*220)		440	400	400	400	9.60	400	9.60	0.00	
Sub Total (B)		1320	958	1013	1023	22.89	954	22.99	-0.11	
C. NHPC	Chamera I HPS (3*180)	540	534	539	507	12.39	516	12.25	0.13	
	Chamera II HPS (3*100)	300	300	303	304	7.27	303	7.20	0.07	
	Chamera III HPS (3*77)	231	229	235	174	4.78	199	4.63	0.15	
	Bairasuil HPS(3*60)	180	145	121	0	1.95	81	1.90	0.05	
	Salal-HPS (6*115)	690	228	0	672	5.65	235	5.46	0.18	
	Tanakpur-HPS (3*40)	94	91	95	96	2.27	94	2.18	0.09	
	Uri-I HPS (4*120)	480	312	281	284	7.98	332	7.53	0.45	
	Uri-II HPS (4*60)	240	176	236	183	4.34	181	4.35	-0.01	
	Dhauliganga-HPS (4*70)	280	280	285	285	6.38	266	6.24	0.14	
	Dulhasti-HPS (3*130)	390	386	399	398	9.41	392	9.26	0.14	
	Sewa-II HPS (3*40)	120	119	125	0	0.91	38	0.70	0.21	
	Parbati 3 (4*130)	520	260	131	132	3.22	134	3.19	0.04	
	Sub Total (C)	4065	3060	2748	3036	67	2772	65	2	
	D.SJVNL	NJPC (6*250)	1500	1605	1605	1605	38.87	1620	38.52	0.35
Rampur HEP (6*68.67)		412	428	428	428	10.14	422	10.12	0.02	
Sub Total (D)		1912	2033	2033	2033	49.01	2042	48.63	0.37	
E. THDC	Tehri HPS (4*250)	1000	1050	964	471	10.26	428	10.00	0.26	
	Koteshwar HPS (4*100)	400	144	395	86	3.70	154	3.60	0.10	
	Sub Total (E)	1400	1194	1359	557	13.97	582	13.60	0.37	
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	914	1464	669	22.08	920	21.94	0.14	
	Dehar HPS (6*165)	990	578	825	560	13.82	576	13.87	-0.05	
	Pong HPS (6*66)	396	229	324	192	5.48	228	5.49	-0.01	
	Sub Total (F)	2765	1721	2613	1421	41.39	1725	41.31	0.08	
G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	111	103	2.18	91	2.03	0.14	
	KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	1200	1150	27.35	1140	27.35	0.01	
	Malana Stg-II HPS (2*50)	100	0	110	80	2.02	84	1.90	0.12	
	Shree Cement TPS (2*150)	300	0	149	281	3.93	164	6.43	-2.50	
	Budhil HPS(IPP) (2*35)	70	0	76	37	1.51	63	1.52	-0.01	
Sub Total (G)	1662	0	1647	1652	36.99	1541	39.24	-2.25		
H. Total Regional Entities (A-G)	25237	19751	19806	18648	430.13	17922	431.67	-1.54		

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	1060	1040	23.68	987	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	360	360	7.83	326	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	805	796	17.37	724	
	Goindwal(GVK)		0	0	0.00	0	
	Rajpura (2*700)	1400	1377	1167	30.03	1251	
	Talwandi Saboo (1*660)	660	0	0	0.00	0	
	Thermal (Total)	4700	3602	3363	78.91	3288	
	Total Hydro	1000	1043	958	22.24	927	
	Total Punjab	5700	4645	4321	101.15	4215	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	447	441	10.12	421
DCRTPP (Yamuna nagar) (2*300)		600	460	469	11.49	479	
Faridabad GPS (NTPC)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	850	793	20.27	845	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	369	371	8.90	371	
Thermal (Total)		4944	2126	2074	50.78	2116	
Total Hydro		62	28	26	0.64	27	
Total Haryana		5006	2154	2100	51.42	2142	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	1038	1075	25.60	1067
		suratgarh TPS (6*250)	1500	763	826	19.17	799
		Chabra TPS (4*250)	1000	181	0	1.42	59
		Dholpur GPS (3*110)	330	80	80	1.93	81
		Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	206	208	5.11	213
	RAPS A (NPC) (1*100+1*200)	300	160	161	4.00	167	
	Barsingar (NLC) (2*125)	250	67	66	1.56	65	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	824	947	22.10	921	
	V/S LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	552	465	12.19	508	
	Kawai(Adani) (2*660)	1320	880	1088	25.47	1061	
	Thermal (Total)	8876	4751	4916	119	4940	
	Total Hydro	550	26	108	0.99	41	
	Wind power	3214	676	901	21.33	889	
	Biomass	99	21	21	0.50	21	
	Solar	730	0	0	0.00	0	
	Renewable/Others (Total)	4043	697	922	21.84	910	
	Total Rajasthan	13469	5474	5946	141.38	5891	
	UP	Anpara TPS (3*210+2*500)	1630	1115	1159	25.70	1071
Obra TPS (2*50+2*94+5*200)		1194	299	394	8.30	346	
Panicha TPS (2*110+2*220+2*250)		1140	820	802	19.30	804	
Panki TPS (2*105)		210	0	0	0.00	0	
Harduaganj TPS (1*60+1*105+2*250)		665	443	394	10.00	417	
Tanda TPS (NTPC) (4*110)		440	185	190	4.58	191	
Roza TPS (IPP) (4*300)		1200	1080	1094	26.10	1088	
Anpara-C (IPP) (2*600)		1200	1089	1080	25.80	1075	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	365	363	8.50	354	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(1*660)		660	338	343	6.50	271	
Thermal (Total)		9289	5734	5819	135	5616	
Vishnuparyag HPS (IPP)(4*110)		440	0	0	0.00	0	
Alakananda(4*82.5)		330	332	333	7.90	329	
Other Hydro		527	200	228	4.90	204	
Cogeneration		981	50	50	1.20	50	
Total UP	11567	6316	6430	149	6199		
Uttarakhand	Total Hydro	1398	788	803	20.34	847	
	Total Uttarakhand	1398	788	803	20.34	847	
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	32	33	0.71	30	
	Pragati Gas Turbine (2x104+ 1x122)	330	260	262	6.39	266	
	Riithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	0	0	0.00	0	
	Badarpur TPS (NTPC) (3*95+2*210)	705	313	313	6.92	288	
	Thermal (Total)	2917	605	608	14.02	584	
	Total Delhi	2917	605	608	14.02	584	
HP	Baspa HPS (IPP) (3*100)	300	332	332	7.85	327	
	Malana HPS (IPP) (2*43)	86	84	51	1.62	67	
	Other Hydro	878	533	573	13.54	564	
	Total HP	1264	949	956	23.00	958	
J & K	Baglihar HPS (IPP) (3*150)	450	450	450	10.80	450	
	Other Hydro/IPP	560	166	159	3.94	164	
	Gas/Diesel/Others	190	0	0	0.00	0	
	Total J & K	1200	616	609	14.74	614	
Total State Control Area Generation		42521	21547	21773	514.81	21451	
J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]			7451	7413	174.25	7261	
Total Regional Availability(Gross)		67758	48804	47834	1119.20	46633	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	11020	9079	220.83	9201
State Control Area Hydro	6581	3982	4021	95	3948
Total Regional Hydro	18815	15002	13100	315.58	13149

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		-150		0	250	0.00	4.70	-4.70
765 KV Gwalior-Agra (D/C)	2224		1824		2290	0	45.72	0.00	45.72
400 KV Zerda-Kankroli	-61		-90		0	253	0.00	3.32	-3.32
400 KV Zerda-Bhimmal	-37		-57		0	201	0.00	2.34	-2.34
220 KV Auraiya-Malanpur	-63		-71		0	108	0.00	1.62	-1.62
220 KV Badod-Kota/Morak	-4		-15		0	72	0.00	0.46	-0.46
Mundra-Mohinderqarh(HVDC Bipole)	2205		2498		2505	0	55.16	0.00	55.16
400 KV Vindhychal - Rihand	503		328		512	0	10.89	0.00	10.89
765 kV Phagi-Gwalior (D/C)	1013		1002		1239	0	23.54	0.00	23.54
Sub Total WR	5630		5269				135.31	12.44	122.87
Pusauli Bypass/HVDC	400		400		400	0	8.90	0.00	8.90
400 KV MZP- GKP (D/C)	374		600		676	0	12.95	0.00	12.95
400 KV Patna-Balia(D/C) X 2	280		210		404	0	7.18	0.00	7.18
400 KV B'Sharif-Balia (D/C)	109		157		289	0	4.58	0.00	4.58
765 KV Pusauli-Balia	94		75		153	0	1.11	0.00	1.11
765 KV Gaya-Fatehpur	170		256		311	0	5.95	0.00	5.95
220 KV Pusauli-Sahupuri	150		136		223	0	3.74	0.00	3.74
132 KV K'nasa-Sahupuri	0		0		0	0	0.00	0.00	0.00
132 KV Son Ngr-Rihand	-42		-40		0	44	0.00	0.94	-0.94
132 KV Garhwa-Rihand	0		0		0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	3		118		204	95	2.74	0.00	2.74
400 KV Barh -GKP (D/C)	283		232		283	0	5.18	0.00	5.18
Sub Total ER	1821		2144				52.32	0.94	51.38
Total IR Exch	7451		7413				187.63	13.38	174.25

V(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
23.77	3.92	27.70	23.55	11.68	18.08	0.00	2.23	-2.23
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
71.56	96.24	167.81	51.38	122.87	174.25	-20.18	26.63	6.45

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	-6		0		0	28	0	0	-0.17

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	0.10	1.87	27.65	80.62	66.46	4.06	1.78	0.05	0.00

<----- Frequency (Hz) ----->				Average Frequency Hz	Frequency Variation Index	Std. Dev.	Frequency in 15 Min Block	
Maximum		Minimum					MAX (Hz)	MIN (Hz)
Freq	Time	Freq	Time	Hz				
50.20	6.03	49.67	11.13	49.94	0.085	0.071	50.16	49.87

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	10:00	399	03:29	0.0	0.0	0.0	0.0
Gorakhpur	400	422	17:35	398	23:24	0.0	0.0	2.9	0.0
Bareilly	400	394	00:00	394	00:00	0.0	0.0	0.0	0.0
Kanpur	400	417	18:01	399	12:13	0.0	0.0	0.0	0.0
Dadri	400	415	18:01	398	22:08	0.0	0.0	0.0	0.0
Ballabgarh	400	419	18:01	398	22:19	0.0	0.0	0.0	0.0
Bawana	400	416	18:02	398	22:06	0.0	0.0	0.0	0.0
Bassi	400	423	18:31	397	11:08	0.0	0.0	3.2	0.0
Hissar	400	411	18:01	393	12:13	0.0	0.0	0.0	0.0
Moga	400	408	06:02	392	12:13	0.0	0.0	0.0	0.0
Abdullapur	400	406	17:04	390	00:02	0.0	0.0	0.0	0.0
Nalagarh	400	414	06:04	401	12:11	0.0	0.0	0.0	0.0
Kishenpur	400	416	17:24	396	12:13	0.0	0.0	0.0	0.0
Wagoora	400	407	18:00	386	11:11	0.0	12.2	0.0	0.0
Amritsar	400	407	06:09	390	12:13	0.0	0.0	0.0	0.0
Kashipur	400	419	17:21	408	12:13	0.0	0.0	0.0	0.0
Hamirpur	400	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Rishikesh	400	411	18:02	381	12:13	0.0	9.8	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	779	18:02	742	11:09	0.0	0.0	0.0	0.0
Balia	765	777	17:35	740	23:27	0.0	1.8	0.0	0.0
Moga	765	785	18:02	751	12:13	0.0	0.0	0.0	0.0
Agra	765	793	18:02	753	12:13	0.0	0.0	0.0	0.0
Bhiwani	765	793	18:00	758	12:13	0.0	0.0	0.0	0.0
Unnao	765	762	17:46	732	12:13	0.0	19.2	0.0	0.0
Lucknow	765	783	18:02	742	23:48	0.0	0.0	0.0	0.0
Meerut	765	801	18:01	758	12:13	0.0	0.0	0.2	0.0
Jhatikara	765	796	18:02	757	22:08	0.0	0.0	0.0	0.0
Bareilly	765	793	18:01	752	12:13	0.0	0.0	0.0	0.0
Anta	765	789	18:03	767	11:09	0.0	0.0	0.0	0.0
Phagi	765	791	18:00	758	23:11	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	511.02	1605.30	509.76	1530.03	948.81	662.27
Pong	426.72	384.05	422.77	1020.81	416.15	718.14	375.82	308.43
Tehrri	829.79	740.04	817.55	952.25	824.35	890.26	434.84	230.00
Koteshwar	612.50	598.50	609.73	4.43	611.14	5.09	230.00	243.82
Chamera-I	760.00	748.75	751.62	0.00	0.00	0.00	216.59	335.33
Rihand	268.22	252.98	852.80	301.20	854.70	333.20	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	520.18	11.38	513.84	11.48	332.54	532.74

* 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	1336	411	0	1334	226	0	31.97	8.74	40.71
Delhi	517	162	0	584	-40	0	12.97	3.65	16.62
Haryana	1635	-56	0	1678	128	0	39.48	0.08	39.57
HP	-1119	-409	0	-918	-453	0	-22.98	-11.50	-34.47
J&K	-592	-313	0	-491	248	0	-12.59	1.78	-10.80
CHD	0	0	0	0	0	0	0.24	-0.09	0.14
Rajasthan	-254	1260	1	-316	977	1	-6.50	26.63	20.13
UP	316	0	0	255	0	0	7.13	0.00	7.13
Uttarakhand	-188	-37	0	-147	78	0	-3.76	0.52	-3.23
Total	1652	1017	1	1979	1163	1	45.97	29.82	75.78

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	1336	1287	417	207	0	0
Delhi	859	184	409	-45	0	0
Haryana	1726	1633	150	-459	0	0
HP	-851	-1127	-373	-614	0	0
J&K	-491	-592	248	-313	0	0
CHD	29	0	0	-30	0	0
Rajasthan	-254	-397	1652	505	1	1
UP	384	206	0	0	0	0
Uttarakhand	-136	-203	79	-37	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 30.08.2015 :
Normal

XIV. Synchronisation of new generating units :

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

XVI. Tripping of lines in pooling stations :

XVII. Complete generation loss in a generating station :