

पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पब्लिसिड की पूर्ण स्वायत्तिय प्राप्त सार्वजनिक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 11.09.2015
Date of Reporting : 12.09.2015

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
50354	2398	52752	49.87	47265	3650	50916	50.11	1147.4	70.44

* 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	94.76	22.13		116.88	98.21	99.00	0.78	215.88	0.00
Haryana	57.88	0.75		58.63	133.73	132.35	-1.39	190.98	0.00
Rajasthan	136.90	1.56	6.61	145.07	83.63	87.49	3.87	232.56	4.88
Delhi	17.40			17.40	89.22	88.07	-1.15	105.47	0.11
UP	131.41	14.80		146.21	137.93	146.38	8.45	292.59	55.68
Uttarakhand		20.07		20.07	19.80	20.04	0.24	40.11	0.67
HP		18.12		18.12	8.40	7.85	-0.55	25.97	0.09
J & K		15.47	0.00	15.47	21.64	22.64	1.00	38.11	9.02
Chandigarh				0.00	5.60	5.74	0.27	5.74	0.00
Total	438.35	92.89	6.61	537.84	598.17	609.58	11.53	1147.41	70.44

* Shortage furnished by the respective constituent. \$ 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 (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	9535	0	-34	664	8485	0	65	667	9535
Haryana	8884	0	5	1786	7944	0	99	1778	8884
Rajasthan	9496	201	185	401	10312	90	86	1200	10479
Delhi	4682	24	-66	462	4341	0	71	31	5078
UP	12433	1700	242	410	12170	3330	715	975	12718
Uttarakhand	1941	0	104	83	1537	0	6	380	1941
HP	1216	0	-79	-807	974	0	87	-949	1266
J&K	1893	473	-61	-328	1306	230	23	-477	1939
Chandigarh	273		-8	0	196	0	7	0	285
Total	50354	2398	287	2672	47265	3650	1158	3605	50354

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

Diversity is 1.04

III. Regional Entities :

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

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 Net MU
	Rihand I STPS (2*500)	1000	789	855	869	19.12	797	18.85	0.27
	Rihand II STPS (2*500)	1000	953	1038	1011	23.19	966	22.70	0.50
	Rihand III STPS (2*500)	1000	480	512	450	11.64	485	11.39	0.25
	Dadri I STPS (4*210)	840	600	633	664	13.65	569	14.14	-0.49
	Dadri II STPS (2*490)	980	970	1008	993	21.79	908	22.98	-1.18
	Unchahar I TPS (2*210)	420	393	430	423	9.04	377	9.26	-0.22
	Unchahar II TPS (2*210)	420	400	438	409	9.34	389	9.51	-0.17
	Unchahar III TPS (1*220)	210	200	218	199	4.65	194	4.77	-0.12
	ISTPP (Jhajjar) (3*500)	1500	1424	1025	997	19.68	820	20.36	-0.69
	Dadri GPS (4*130.19+2*154.51)	830	800	388	359	8.32	347	8.63	-0.31
	Anta GPS (3*88.71+1*153.2)	419	391	322	335	7.42	309	7.89	-0.48
	Auraiya GPS (4*111.19+2*109.30)	663	635	148	39	2.79	116	2.99	-0.20
	Dadri Solar	5	1	0	0	0.02	1	0.03	0.00
	Unchahar Solar	10	3	0	0	0.02	1	0.06	-0.04
	Singrauli Solar	15	3	0	0	0.04	2	0.08	-0.04
	KHEP	800	825	677	201	8.17	340	8.15	0.02
	Sub Total (A)	12112	10471	9643	8376	199	8277	200	-2
B. NPC	NAPS (2*220)	440	381	412	422	9.03	376	9.14	-0.11
	RAPS- B (2*220)	440	187	211	211	4.44	185	4.49	-0.05
	RAPS- C (2*220)	440	390	430	433	9.31	388	9.36	-0.05
	Sub Total (B)	1320	958	1053	1066	22.78	949	22.99	-0.21
C. NHPC	Chamera I HPS (3*180)	540	534	362	0	5.37	224	5.20	0.17
	Chamera II HPS (3*100)	300	300	301	102	5.38	224	5.30	0.07
	Chamera III HPS (3*77)	231	229	233	79	3.66	153	3.48	0.18
	Bairasuli HPS(3*60)	180	179	184	50	1.40	58	1.32	0.08
	Salal-HPS (6*115)	690	491	675	401	12.73	530	11.77	0.95
	Tanakpur-HPS (3*40)	94	88	95	90	2.22	93	2.12	0.11
	Uri-I HPS (4*120)	480	205	350	200	5.50	229	4.91	0.60
	Uri-II HPS (4*60)	240	124	217	126	3.11	130	2.98	0.14
	Dhauliganga-HPS (4*70)	280	280	284	144	5.06	211	4.78	0.28
	Dulhasti-HPS (3*130)	390	386	403	397	9.39	391	9.26	0.12
	Sewa-II HPS (3*40)	120	119	130	0	0.53	22	0.45	0.08
	Parbati 3 (4*130)	520	390	393	0	1.79	75	1.69	0.10
	Sub Total (C)	4065	3326	3626	1587	56	2339	53	3
D.SJVNL	NJPC (6*250)	1500	1605	1620	905	30.07	1253	29.76	0.31
	Rampur HEP (6*68.67)	412	409	440	249	8.38	349	8.18	0.20
	Sub Total (D)	1912	2014	2060	1154	38.44	1602	37.93	0.51
E. THDC	Tehri HPS (4*250)	1000	1080	1030	0	6.66	278	6.50	0.16
	Koteshwar HPS (4*100)	400	92	101	92	2.24	93	2.20	0.04
	Sub Total (E)	1400	1172	1131	92	8.90	371	8.70	0.20
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	956	1438	644	22.83	951	22.95	-0.12
	Dehar HPS (6*165)	990	577	825	560	14.10	587	13.86	0.24
	Pong HPS (6*66)	396	308	324	258	7.36	307	7.38	-0.02
	Sub Total (F)	2765	1841	2587	1462	44.29	1845	44.19	0.10
G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	93	68	1.56	65	1.25	0.31
	KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	1000	600	17.66	736	17.15	0.51
	Malana Stg-II HPS (2*50)	100	0	110	55	1.62	67	1.51	0.11
	Shree Cement TPS (2*150)	300	0	143	152	3.48	145	3.48	0.00
	Budhil HPS(IPP) (2*35)	70	0	75	37	1.05	44	1.02	0.03
	Sub Total (G)	1662	0	1422	912	25.36	1057	24.41	0.95
H. Total Regional Entities (A-G)		25237	19781	21521	14650	394.55	16440	391.68	2.87

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	840	1040	21.51	896	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	205	295	5.95	248	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	933	939	20.89	871	
	Goindwal(GVK)	0	0	0	0.00	0	
	Rajpura (2*700)	1400	1385	1378	31.70	1321	
	Talwandi Saboo (1*660)	660	677	650	14.71	613	
	Thermal (Total)	4700	4040	4302	94.76	3948	
	Total Hydro	1000	1034	805	22.13	922	
	Total Punjab	5700	5074	5107	116.88	4870	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	834	846	19.39	808
DCRTPP (Yamuna nagar) (2*300)		600	558	277	10.76	448	
Faridabad GPS (NTPC)		432	0	0	0.00	0	
RGTPP (khedra) (IPP) (2*600)		1200	558	573	13.43	560	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	615	604	14.30	596	
Thermal (Total)		4944	2565	2300	57.88	2412	
Total Hydro		62	30	32	0.75	31	
Total Haryana		5006	2595	2332	58.63	2443	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	1035	1041	24.00	1000
		suratgarh TPS (6*250)	1500	1349	1252	31.62	1318
		Chabra TPS (4*250)	1000	299	379	8.34	347
		Dholpur GPS (3*110)	330	87	88	2.14	89
	Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	203	210	5.08	212	
	RAPS A (NPC) (1*100+1*200)	300	159	160	3.94	164	
	Barsingar (NLC) (2*125)	250	177	179	4.17	174	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	719	714	17.15	715	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	1008	998	24.28	1012	
	Kawai(Adani) (2*660)	1320	623	1106	16.19	675	
	Thermal (Total)	8876	5659	6127	137	5704	
	Total Hydro	550	155	25	1.56	65	
	Wind power	3214	10	343	3.78	158	
	Biomass	99	27	27	0.64	27	
	Solar	730	0	0	2.18	91	
	Renewable/Others (Total)	4043	37	370	6.61	275	
	Total Rajasthan	13469	5851	6522	145.07	6044	
	UP	Anpara TPS (3*210+2*500)	1630	1330	1349	31.20	1300
Obra TPS (2*50+2*94+5*200)		1194	437	454	10.30	429	
Paricha TPS (2*110+2*220+2*250)		1140	0	566	8.43	351	
Panki TPS (2*105)		210	63	77	1.60	67	
Harduaganj TPS (1*60+1*105+2*250)		665	426	405	10.00	417	
Tanda TPS (NTPC) (4*110)		440	184	189	4.58	191	
Roza TPS (IPP) (4*300)		1200	828	1071	25.00	1042	
Anpara-C (IPP) (2*600)		1200	1089	1080	25.90	1079	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	405	403	9.40	392	
Anpara-D(1*500)		500	194	149	3.80	158	
Lalitpur TPS(1*660)		660	0	0	0.00	0	
Thermal (Total)		9289	4956	5743	130	5425	
Vishnuparyag HPS (IPP)(4*110)		440	435	0	2.60	108	
Alaknanda(4*82.5)		330	279	275	7.00	292	
Other Hydro		527	224	255	5.20	217	
Cogeneration		981	50	50	1.20	50	
Total UP		11567	5944	6323	146	6092	
Uttarakhand	Total Hydro	1398	878	775	20.07	836	
	Total Uttarakhand	1398	878	775	20.07	836	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.02	-1	
	Delhi Gas Turbine (6x30 + 3x34)	282	34	34	0.84	35	
	Prahati Gas Turbine (2x104+ 1x122)	330	262	262	6.38	266	
	Rihala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	279	233	6.23	260	
	Badarpur TPS (NTPC) (3*95+2*210)	705	188	178	3.97	165	
	Thermal (Total)	2917	763	706	17.40	725	
	Total Delhi	2917	763	706	17.40	725	
HP	Baspa HPS (IPP) (3*100)	300	207	342	6.45	269	
	Malana HPS (IPP) (2*43)	86	40	79	1.36	57	
	Other Hydro	878	431	473	10.32	430	
	Total HP	1264	678	894	18.12	755	
J & K	Baqilhar HPS (IPP) (3*150)	450	440	586	12.35	515	
	Other Hydro/IPP	560	160	126	3.12	130	
	Gas/Diesel/Others	190	0	0	0.00	0	
	Total J & K	1200	600	712	15.47	645	
Total State Control Area Generation		42521	22383	23371	537.84	22410	
J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]			8691	10007	236.17	9841	
Total Regional Availability(Gross)		67758	52595	48028	1168.57	48690	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	11284	5219	176.76	7365
State Control Area Hydro	6581	4313	3773	93	3870
Total Regional Hydro	18815	15597	8992	269.65	11235

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	MW	MW	Import	Export	Import	Export	
Vindhychal(HVDC B/B)	250	250	250	0	6.01	0.00	6.01		
765 KV Gwalior-Agra (D/C)	2375	2858	3189	0	64.94	0.00	64.94		
400 KV Zerda-Kankroli	36	115	146	12	1.33	0.00	1.33		
400 KV Zerda-Bhinmal	130	194	262	0	3.49	0.00	3.49		
220 KV Auraiya-Malanpur	-51	-23	0	52	0.00	0.52	-0.52		
220 KV Badod-Kota/Morak	-10	27	46	39	0.28	0.00	0.28		
Mundra-Mohindergarh(HVDC Bipole)	2498	2499	2509	0	60.50	0.00	60.50		
400 KV Vindhychal - Rihand	508	478	508	0	12.08	0.00	12.08		
765 kV Phagi-Gwalior (D/C)	1126	1189	1368	0	28.77	0.00	28.77		
Sub Total WR	6862	7587			177.38	0.52	176.87		
Pusauli Bypass/HVDC	400	400	400	0	9.05	0.00	9.05		
400 KV MZP- GKP (D/C)	218	524	724	0	12.73	0.00	12.73		
400 KV Patna-Balia(D/C) X 2	331	463	604	0	11.43	0.00	11.43		
400 KV B'Sharif-Balia (D/C)	142	291	390	0	7.35	0.00	7.35		
765 KV Pusauli-Balia	180	206	291	0	2.96	0.00	2.96		
765 KV Gaya-Fatehpur	184	233	372	0	6.08	0.00	6.08		
220 KV Pusauli-Sahupuri	160	60	210	0	3.46	0.00	3.46		
132 KV K'nasa-Sahupuri	0	0	0	0	0.00	0.00	0.00		
132 KV Son Ngr-Rihand	-40	-42	0	46	0.00	0.92	-0.92		
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00		
765 KV Sasaram - Fatehpur	-2	41	214	80	2.00	0.00	2.00		
400 KV Barh -GKP (D/C)	256	244	288	0	5.17	0.00	5.17		
Sub Total ER	1829	2420			60.22	0.92	59.31		
+/- 800 KV BiswanathChariali-Agra	0	0	0	0	0	0	0		
Sub Total NER	0	0			0	0	0		
Total IR Exch	8691	10007			237.61	1.43	236.17		

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

ER	ISGS/LT Schedule (MU)		Bilateral Schedule (MU)		Power Exchange Shdl (MU)		Wheeling (MU)	
	Bhutan	Total	Through ER	Through WR	Through ER	Through WR	Through ER	Through WR
39.22	3.97	43.18	16.54	12.85	2.32	41.69	1.13	-1.13
Total IR Schedule (MU)								
Through ER	Through WR	Total	Through ER	Through WR	Total	Through ER	Through WR	Total
63.17	160.15	223.32	59.31	176.87	236.17	-3.86	16.72	12.85

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	MW	MW	Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	-7	0	0	7	0	0	0	-0.03	

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	0.50	2.44	22.67	72.82	68.83	6.81	1.70	0.00	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					
50.20	13.01	49.64	19.16	49.95	0.076	0.074	50.15	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	400	00:00	395	10:46	0.0	0.0	0.0	0.0
Gorakhpur	400	413	18:03	392	19:14	0.0	0.0	0.0	0.0
Barilly	400	406	02:59	382	09:43	0.0	13.5	0.0	0.0
Kanpur	400	409	06:02	391	19:14	0.0	0.0	0.0	0.0
Dadri	400	409	05:47	390	14:51	0.0	0.0	0.0	0.0
Ballabgarh	400	415	05:59	392	14:52	0.0	0.0	0.0	0.0
Bawana	400	414	06:00	395	19:14	0.0	0.0	0.0	0.0
Bassi	400	414	18:01	393	11:53	0.0	0.0	0.0	0.0
Hissar	400	408	06:01	388	19:13	0.0	0.7	0.0	0.0
Moga	400	408	06:03	389	14:51	0.0	0.6	0.0	0.0
Abdullapur	400	413	05:46	391	19:02	0.0	0.0	0.0	0.0
Nalagarh	400	419	06:00	398	14:15	0.0	0.0	0.0	0.0
Kishenpur	400	417	02:57	397	19:11	0.0	0.0	0.0	0.0
Wagoora	400	410	03:12	377	19:20	6.1	21.2	0.0	0.0
Amritsar	400	412	03:58	391	14:50	0.0	0.0	0.0	0.0
Kashipur	400	411	16:04	401	19:16	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	395	03:57	371	19:13	28.6	83.5	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	763	18:04	730	19:12	0.0	24.5	0.0	0.0
Balia	765	770	18:04	737	19:14	0.0	1.1	0.0	0.0
Moga	765	780	06:01	744	18:54	0.0	0.0	0.0	0.0
Agra	765	778	06:02	745	11:30	0.0	0.0	0.0	0.0
Bhiwani	765	785	06:00	752	14:18	0.0	0.0	0.0	0.0
Unnao	765	746	02:59	715	19:14	26.7	89.7	0.0	0.0
Lucknow	765	760	18:04	727	19:14	0.1	34.4	0.0	0.0
Meerut	765	790	06:02	751	14:51	0.0	0.0	0.0	0.0
Jhatikara	765	788	06:02	750	14:53	0.0	0.0	0.0	0.0
Barilly	765	762	02:55	724	19:14	0.7	30.0	0.0	0.0
Anta	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Phagi	765	779	18:04	749	11:11	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	511.34	1620.46	511.11	1605.30	569.62	690.85
Pong	426.72	384.05	422.03	990.81	416.56	743.22	126.55	421.38
Tehri	829.79	740.04	820.90	1021.27	818.80	978.26	222.35	148.00
Koteshwar	612.50	598.50	610.82	4.95	611.62	5.46	148.00	147.26
Chamera-I	760.00	748.75	753.46	0.00	0.00	0.00	174.37	145.34
Rihand	268.22	252.98	852.20	291.30	856.20	358.90	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	514.19	11.82	517.66	6.37	143.80	430.13

* 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	667	0	0	664	0	0	16.01	1.42	17.43
Delhi	286	-220	-35	530	-33	-35	9.01	-0.76	8.25
Haryana	1686	92	0	1700	86	0	40.64	-0.29	40.35
HP	-919	-30	0	-742	-65	0	-19.23	0.23	-19.00
J&K	-442	-35	0	-442	114	0	-10.61	2.31	-8.30
CHD	0	0	0	0	0	0	0.00	0.06	0.06
Rajasthan	-329	1495	34	-472	839	34	-8.72	30.67	21.94
UP	484	491	0	410	0	0	9.62	9.40	19.02
Uttarakhand	-104	484	0	-249	332	0	-3.31	9.94	6.63
Total	1328	2278	-1	1400	1273	-1	33.41	52.98	86.39

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	667	664	694	0	0	0
Delhi	733	99	331	-526	0	-35
Haryana	1700	1668	125	-366	0	0
HP	-742	-919	128	-65	0	0
J&K	-442	-442	239	-35	0	0
CHD	0	0	59	0	0	0
Rajasthan	-293	-472	1727	141	34	0
UP	508	296	491	0	0	0
Uttarakhand	-80	-249	596	20	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 11.09.2015 :

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 :