

पावर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(सार्वजनिक की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 18.11.2015
Date of Reporting : 19.11.2015

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
37838	364	38202	49.95	28615	1643	30258	50.11	785.1	41.97

* 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	25.69	10.66		36.35	49.25	50.13	0.89	86.48	0.00
Haryana	40.43	0.45		40.88	66.08	64.66	-1.43	105.54	0.00
Rajasthan	109.99	5.18	4.57	119.73	78.87	81.80	2.93	201.53	0.00
Delhi	11.13			11.13	44.62	45.07	0.45	56.20	0.04
UP	113.81	6.44		120.25	111.38	113.22	1.84	233.47	31.54
Uttarakhand		7.02		7.02	24.62	26.06	1.43	33.07	0.59
HP		5.78		5.78	17.32	18.11	0.78	23.89	0.00
J & K		9.67	0.00	9.67	31.78	31.87	0.09	41.54	9.80
Chandigarh				0.00	3.45	3.38	0.27	3.38	0.00
Total	301.05	45.19	4.57	350.81	427.37	434.29	7.26	785.10	41.97

* 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 (19:00 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	4212	0	-7	-368	2632	0	64	-452	4544
Haryana	6141	0	109	-230	2974	0	-122	-222	6141
Rajasthan	8820	0	-160	637	8039	0	282	690	9608
Delhi	3160	0	28	-129	1608	0	115	-942	3160
UP	10442	-198	22	-262	9894	1367	-230	114	10531
Uttarakhand	1712	75	92	364	1083	0	24	373	1712
HP	1221	0	24	-170	731	0	63	205	1327
J&K	1948	487	36	297	1565	276	-2	339	1982
Chandigarh	182	0	-14	0	90	0	14	-30	182
Total	37838	364	131	138	28615	1643	207	75	37838

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

Diversity is 1.04

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 Net MU
A. NTPC	Singrauli STPS (5*200+2*500)	2000	1896	2061	1803	44.41	1850	44.32	0.09
	Rihand I STPS (2*500)	1000	870	690	671	18.39	766	18.50	-0.12
	Rihand II STPS (2*500)	1000	963	697	722	19.88	828	19.70	0.18
	Rihand III STPS (2*500)	1000	945	850	768	20.84	868	20.97	-0.13
	Dadri I STPS (4*210)	840	810	131	141	3.35	140	3.38	-0.03
	Dadri II STPS (2*490)	980	980	320	347	8.01	334	8.49	-0.49
	Unchahar I TPS (2*210)	420	406	331	275	6.78	283	7.46	-0.68
	Unchahar II TPS (2*210)	420	404	297	255	6.29	262	6.86	-0.57
	Unchahar III TPS (1*220)	210	202	155	132	3.23	135	3.45	-0.22
	ISTPP (Jhajjar) (3*500)	1500	1500	602	634	14.63	610	15.05	-0.42
	Dadri GPS (4*130.19+2*154.51)	830	630	499	548	11.54	481	11.85	-0.31
	Anta GPS (3*88.71+1*153.2)	419	419	173	195	4.66	194	5.11	-0.45
	Auraiya GPS (4*111.19+2*109.30)	663	653	288	295	5.78	241	5.83	-0.05
	Dadri Solar	5	0	0	0	0.02	1	0.02	0.00
	Unchahar Solar	10	1	0	0	0.03	1	0.03	0.00
	Singrauli Solar	15	2	0	0	0.00	0	0.04	-0.03
	KHEP	800	655	652	0	4.25	177	4.00	0.25
Sub Total (A)	12112	11338	7746	6786	172	7170	175	-3	
B. NPC	NAPS- (2*220)	440	196	217	224	4.75	198	4.70	0.04
	RAPS- B (2*220)	440	393	441	439	9.56	398	9.43	0.12
	RAPS- C (2*220)	440	410	455	455	9.87	411	9.84	0.03
	Sub Total (B)	1320	999	1113	1118	24.17	1007	23.98	0.19
C. NHPC	Chamera I HPS (3*180)	540	540	473	0	3.39	141	3.20	0.19
	Chamera II HPS (3*100)	300	200	199	0	1.49	62	1.50	-0.01
	Chamera III HPS (3*77)	231	229	231	0	1.05	44	0.95	0.10
	Bairasuli HPS(3*60)	180	122	123	0	0.69	29	0.65	0.04
	Salal-HPS (6*115)	690	194	338	225	5.45	227	4.66	0.79
	Tanakpur-HPS (3*40)	94	30	54	30	0.80	33	0.71	0.09
	Uri-I HPS (4*120)	480	440	444	472	10.97	457	10.57	0.40
	Uri-II HPS (4*60)	240	232	241	241	5.57	232	5.57	0.00
	Dhauliganga-HPS (4*70)	280	280	134	0	1.21	50	1.10	0.11
	Dulhasti-HPS (3*130)	390	356	397	0	3.93	164	3.80	0.13
	Sewa-II HPS (3*40)	120	119	126	0	0.65	27	0.60	0.05
	Parbati 3 (4*130)	520	115	0	0	0.81	34	0.39	0.42
	Sub Total (C)	4065	2857	2760	968	36	1501	34	2
	D.SJVNL	NJPC (6*250)	1500	1605	1605	0	10.03	418	10.07
Rampur HEP (6*68.67)		412	432	375	0	2.82	118	2.81	0.02
Sub Total (D)		1912	2037	1980	0	12.85	535	12.88	-0.03
E. THDC	Tehri HPS (4*250)	1000	1068	1060	0	6.54	272	6.40	0.14
	Koteshwar HPS (4*100)	400	92	100	91	2.22	92	2.20	0.02
	Sub Total (E)	1400	1160	1160	91	8.76	365	8.60	0.16
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	553	1057	352	13.33	555	13.28	0.05
	Dehar HPS (6*165)	990	166	495	140	3.94	164	3.98	-0.04
	Pong HPS (6*66)	396	197	318	126	4.55	190	4.73	-0.18
	Sub Total (F)	2765	916	1870	618	21.82	909	21.98	-0.16
	G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	18	0	0.69	29	0.66
KARCHAM WANGTOO HPS(IPP) (4*250)		1000	0	890	0	5.46	228	5.52	-0.06
Malana Stg-II HPS (2*50)		100	0	0	0	0.00	0	0.00	0.00
Shree Cement TPS (2*150)		300	0	261	259	6.20	258	6.23	-0.03
Budhil HPS(IPP) (2*35)		70	0	75	0	0.23	10	0.23	0.00
Sub Total (G)		1662	0	1243	259	12.59	524	12.65	-0.06
H. Total Regional Entities (A-G)	25237	19307	17872	9840	288.29	12012	288.84	-0.56	

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	0.00	0	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	100	90	2.01	84	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	244	205	4.84	201	
	Goindwal(GVK)		0	0	0.00	0	
	Rajpura (2*700)	1400	354	352	11.09	462	
	Talwandi Saboo (2*660)	1320	346	349	7.76	323	
	Thermal (Total)	5360	1044	996	25.69	1071	
	Total Hydro	1000	506	392	10.66	444	
	Total Punjab	6360	1550	1388	36.35	1515	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	0	0	0.00	0
DCRTPP (Yamuna nagar) (2*300)		600	552	459	11.60	484	
Faridabad GPS (NTPC)		432	408	318	8.51	355	
RGTPP (khedar) (IPP) (2*600)		1200	576	386	10.46	436	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	562	376	9.86	411	
Thermal (Total)		4944	2098	1539	40.43	1685	
Total Hydro		62	12	17	0.45	19	
Total Haryana		5006	2110	1556	40.88	1703	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	880	838	21.07	878
	suratgarh TPS (6*250)	1500	432	401	10.11	421	
	Chabra TPS (4*250)	1000	675	571	14.85	619	
	Dholpur GPS (3*110)	330	90	87	2.25	94	
	Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	167	164	4.90	204	
	RAPS A (NPC) (1*100+1*200)	300	160	149	4.00	167	
	Barsingar (NLC) (2*125)	250	94	94	2.07	86	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	479	573	11.87	495	
	VS LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	542	446	11.89	495	
	Kawai(Adani) (2*660)	1320	1171	1167	26.98	1124	
	Thermal (Total)	8876	4690	4490	110	4583	
	Total Hydro	550	189	281	5.18	216	
	Wind power	3214	56	216	3.28	137	
	Biomass	99	27	27	0.64	27	
	Solar	730	12	0	0.64	27	
	Renewable/Others (Total)	4043	95	243	4.57	190	
	Total Rajasthan	13469	4974	5014	119.73	4989	
	UP	Anpara TPS (3*210+2*500)	1630	1374	1341	32.70	1363
Obra TPS (2*50+2*94+5*200)		1194	391	382	9.10	379	
Paricha TPS (2*110+2*220+2*250)		1140	626	653	15.10	629	
Panki TPS (2*105)		210	68	72	1.70	71	
Harduaganj TPS (1*60+1*105+2*250)		665	527	527	12.80	533	
Tanda TPS (NTPC) (4*110)		440	273	383	7.61	317	
Roza TPS (IPP) (4*300)		1200	194	275	5.21	217	
Anpara-C (IPP) (2*600)		1200	1080	1082	25.85	1077	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	57	57	1.34	56	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(1*660)		660	0	0	0.00	0	
Bara(1*660)		660	0	0	0.00	0	
Thermal (Total)		9949	4590	4772	111	4642	
Vishnuparyag HPS (IPP)(4*110)		440	117	112	2.68	112	
Alaknanda(4*82.5)		330	68	73	1.76	73	
Other Hydro		527	103	79	2.00	83	
Cogeneration		981	100	100	2.40	100	
Total UP		12227	4978	5136	120	5010	
Uttarakhand		Total Hydro	1398	402	224	7.02	292
		Total Uttarakhand	1398	402	224	7.02	292
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	38	38	0.93	39	
	Pragati Gas Turbine (2x104+ 1x122)	330	159	155	3.74	156	
	Rithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	0	250	4.71	196	
	Badarpur TPS (NTPC) (3*95+2*210)	705	165	165	1.75	73	
	Thermal (Total)	2917	362	608	11.13	464	
	Total Delhi	2917	362	608	11.13	464	
HP	Baspa HPS (IPP) (3*100)	300	31	31	1.56	65	
	Malana HPS (IPP) (2*43)	86	39	8	0.40	17	
	Other Hydro	878	171	111	3.82	159	
	Total HP	1264	241	150	5.78	241	
J & K	Baglihar HPS (IPP) (3*150)	450	290	290	6.96	290	
	Other Hydro/IPP	560	108	117	2.71	113	
	Gas/Diesel/Others	190	0	0	0.00	0	
	Total J & K	1200	398	407	9.67	403	
Total State Control Area Generation		43841	15015	14483	350.81	14617	
J. Net Inter Regional Exchange [(Import +ve)/Export (-ve)]			6454	5768	165.77	6907	
Total Regional Availability(Gross)		69078	39341	30091	804.87	33536	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	9330	1677	89.84	3744
State Control Area Hydro	6581	2036	1735	45	1883
Total Regional Hydro	18815	11366	3412	135.03	5626

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

Element	Peak(19:00 Hrs)	Off Peak(03:00 Hrs)	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW	MW	Import	Export	Import	Export	
Vindhyachal(HVDC B/B)	50	100	100	200	1.07	1.28	-0.21
765 KV Gwalior-Agra (D/C)	2384	2327	3048	0	63.39	0.00	63.39
400 KV Zerda-Kankroli	-72	-125	21	145	0.00	1.31	-1.31
400 KV Zerda-Bhinmal	20	-22	168	85	1.17	0.00	1.17
220 KV Auraiya-Malanpur	-103	-125	0	126	0.00	1.97	-1.97
220 KV Badod-Kota/Morak	-16	-68	14	56	0.00	1.35	-1.35
Mundra-Mohinderorah(HVDC Bipole)	2300	2003	2311	0	52.97	0.00	52.97
400 KV Vindhyachal - Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	891	819	649	0	24.99	0.00	24.99
Sub Total WR	5454	4909			143.58	5.91	137.67
Pusaull Bypass/HVDC	350	350	350	0	8.42	0.00	8.42
400 KV MZP -GKP (D/C)	130	-170	418	160	4.49	0.00	4.49
400 KV Patna-Balia(D/C) X 2	193	278	466	0	8.67	0.00	8.67
400 KV B'Sharif-Balia (D/C)	105	26	177	0	1.70	0.00	1.70
765 KV Gaya-Balia	81	152	243	0	2.21	0.00	2.21
765 KV Gaya-Fatehpur	-11	72	385	109	3.83	0.00	3.83
220 KV Pusaull-Sahupuri	145	169	184	0	3.20	0.00	3.20
132 KV K'nasa-Sahupuri	0	0	0	0	0.00	0.00	0.00
132 KV Son Ngr-Rihand	-20	-26	0	28	0.00	0.59	-0.59
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	221	104	196	298	0.00	0.51	-0.51
400 KV Barh -GKP (D/C)	306	304	402	0	7.94	0.00	7.94
Sub Total ER	1500	1259			40.46	1.10	39.36
+/- 800 KV BiswanathCharialli-Agra	-500	-400	0	500	0.00	11.26	-11.26
Sub Total NER	-500	-400			0.00	11.26	-11.26
Total IR Exch	6454	5768			184.05	18.27	165.77

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	Total	Through ER	Through WR	Through ER	Through WR
27.98	0.95	28.93	4.19	-16.48	17.82	15.04	5.95	-5.95	
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	
56.89	101.03	157.92	28.10	137.67	165.77	-28.79	36.64	7.85	

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

Element	Peak(19:00 Hrs)	Off Peak(03:00 Hrs)	Maximum Interchange (MW)		Energy (MU)		Net Energy MU
	MW	MW	Import	Export	Import	Export	
132 KV Tanakpur - Mahendarnagar	-28	-30	0	33	0	1	-0.73

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	0.00	1.15	10.43	46.43	62.70	20.14	7.30	0.13	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					
50.21	21.54	49.73	8.52	50.00	0.059	0.077	50.22	49.90

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	403	21:36	396	09:48	0.0	0.0	0.0	0.0
Gorakhpur	400	417	07:04	400	17:25	0.0	0.0	0.0	0.0
Bareilly(PG)400kV	400	416	20:56	393	15:58	0.0	0.0	0.0	0.0
Kanpur	400	411	20:00	399	08:50	0.0	0.0	0.0	0.0
Dadri	400	425	02:53	407	08:52	0.0	0.0	20.3	0.0
Ballabgarh	400	429	03:35	410	08:48	0.0	0.0	36.4	0.0
Bawana	400	427	02:51	410	09:46	0.0	0.0	28.8	0.0
Bassi	400	425	21:25	396	08:36	0.0	0.0	9.4	0.0
Hissar	400	421	02:51	402	08:49	0.0	0.0	2.3	0.0
Moga	400	425	02:29	407	08:49	0.0	0.0	19.1	0.0
Abdullapur	400	426	21:26	400	05:54	0.0	0.0	7.2	0.0
Nalagarh	400	435	02:51	412	18:18	0.0	0.0	47.9	16.5
Kishenpur	400	425	02:02	400	18:25	0.0	0.0	14.0	0.0
Wagoora	400	405	13:01	371	18:30	11.5	41.0	0.0	0.0
Amritsar	400	432	02:52	413	08:49	0.0	0.0	43.4	4.9
Kashipur	400	419	03:37	408	13:48	0.0	0.0	0.0	0.0
Hamirpur	400	428	01:07	409	09:54	0.0	0.0	41.4	0.0
Rishikesh	400	413	03:35	385	13:52	0.0	13.0	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	776	19:59	732	08:49	0.0	6.4	0.0	0.0
Balia	765	766	13:25	740	17:38	0.0	1.1	0.0	0.0
Moga	765	808	02:51	775	11:19	0.0	0.0	23.3	0.0
Agra	765	798	20:02	746	08:49	0.0	0.0	0.0	0.0
Bhiwani	765	806	02:54	767	09:46	0.0	0.0	10.8	0.0
Unnao	765	759	20:55	729	08:49	0.0	42.4	0.0	0.0
Lucknow	765	774	20:58	744	08:57	0.0	0.0	0.0	0.0
Meerut	765	812	20:02	772	08:49	0.0	0.0	17.7	0.0
Jhatikara	765	810	02:54	780	06:40	0.0	0.0	47.9	0.0
Bareilly 765 kV	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Anta	765	786	20:37	756	06:55	0.0	0.0	0.0	0.0
Phagi	765	795	20:00	749	06:56	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	507.79	1440.82	504.74	1298.95	228.12	387.94
Pong	426.72	384.05	417.00	755.83	411.55	544.90	53.18	276.37
Tehri	829.79	740.04	814.30	885.26	821.00	1023.28	73.40	152.00
Koteshwar	612.50	598.50	610.94	5.04	609.09	4.21	152.00	146.08
Chamera-I	760.00	748.75	578.40	0.00	0.00	0.00	71.46	91.69
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	507.34	4.68	0.00	1.78	78.89	190.67

* 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	-673	221	0	-600	231	0	-12.65	5.06	-7.59
Delhi	-857	-84	0	-548	419	0	-15.25	7.57	-7.68
Haryana	-320	98	0	-515	285	0	-8.80	3.92	-4.88
HP	138	67	0	231	-402	0	5.69	-2.27	3.41
J&K	425	-86	0	408	-111	0	9.82	-1.27	8.55
CHD	-30	0	0	0	0	0	-0.24	-0.16	-0.40
Rajasthan	0	690	0	0	637	0	9.34	18.73	28.07
UP	114	0	0	-262	0	0	-3.60	0.00	-3.60
Uttarakhand	194	179	0	194	170	0	4.66	6.47	11.13
Total	-1010	1084	0	-1091	1230	0	-11.05	38.05	27.00

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-196	-673	251	141	0	0
Delhi	-544	-857	792	-144	0	0
Haryana	-306	-515	312	-438	0	0
HP	305	138	67	-701	0	0
J&K	425	389	-10	-187	0	0
CHD	0	-30	0	-80	0	0
Rajasthan	718	0	1510	215	0	0
UP	171	-314	0	0	0	0
Uttarakhand	194	194	429	120	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 18.11.2015 :
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 :