

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 27.08.2015
Date of Reporting : 28.08.2015

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
48540	2857	51397	49.88	46148	3360	49508	50.02	1094.1	72.58

* 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	55.46	25.63		81.10	119.05	119.42	0.38	200.52	0.00
Haryana	52.83	0.38		53.21	128.81	128.06	-0.75	181.27	0.00
Rajasthan	114.54	2.07	13.29	129.91	79.41	86.39	6.98	128.29	5.24
Delhi	13.68			13.68	96.48	96.29	-0.18	109.97	0.05
UP	129.79	13.89		143.67	137.48	138.72	1.25	282.40	55.57
Uttarakhand		22.34		22.34	11.89	14.47	2.58	36.81	3.59
HP		23.10		23.10	2.49	3.30	0.81	26.40	0.06
J & K		14.35	0.00	14.35	19.04	19.73	0.69	34.08	8.09
Chandigarh				0.00	6.57	6.35	0.27	6.35	0.00
Total	366.29	101.77	13.29	481.35	601.20	612.73	12.02	1094.08	72.58

* 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	9046	0	111	1365	8044	0	-58	1543	9125
Haryana	8648	0	-176	1861	7893	0	227	1901	8759
Rajasthan	9079	382	496	132	9665	0	428	648	9875
Delhi	4725	0	-131	550	4515	0	81	794	5313
UP	12079	1725	-102	304	12045	3145	172	358	12200
Uttarakhand	1666	295	66	-125	1592	0	215	-299	1694
HP	1186	2	-1	-1317	957	0	8	-1433	1274
J&K	1814	453	128	-476	1216	215	107	-966	1814
Chandigarh	298	0	-25	0	221	0	-31	0	324
Total	48540	2857	366	2293	46148	3360	1149	2547	48540

* 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	Net MU
A. NTPC	Singrauli STPS (5*200+2*500)	2000	1865	2013	2042	45.48	1895	44.75	0.73	
	Rihand I STPS (2*500)	1000	859	947	962	20.16	840	20.61	-0.45	
	Rihand II STPS (2*500)	1000	943	990	1018	22.95	956	22.59	0.36	
	Rihand III STPS (2*500)	1000	480	514	512	11.49	479	11.50	-0.01	
	Dadri I STPS (4*210)	840	600	550	555	12.56	523	13.29	-0.74	
	Dadri II STPS (2*490)	980	970	897	667	20.20	842	21.93	-1.73	
	Unchahar I TPS (2*210)	420	399	407	432	9.08	378	9.55	-0.47	
	Unchahar II TPS (2*210)	420	400	387	437	9.17	382	9.57	-0.40	
	Unchahar III TPS (1*220)	210	200	186	219	4.63	193	4.78	-0.16	
	ISTPP (Jhajjar) (3*500)	1500	1436	850	641	16.56	690	17.04	-0.49	
	Dadri GPS (4*130.19+2*154.51)	830	523	330	296	7.77	324	8.11	-0.34	
	Anta GPS (3*88.71+1*153.2)	419	396	216	231	5.51	230	5.52	-0.01	
	Auraiya GPS (4*111.19+2*109.30)	663	635	299	251	6.67	278	6.73	-0.06	
	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	0.00	0	0.08	-0.08	
	KHEP	800	845	844	706	17.57	732	17.38	0.18	
Sub Total (A)	12112	10559	9430	8969	210	8743	214	-4		
B. NPC	NAPS (2*220)	440	366	407	413	8.90	371	8.78	0.11	
	RAPS- B (2*220)	440	187	207	213	4.45	185	4.49	-0.04	
	RAPS- C (2*220)	440	400	428	434	9.24	385	9.60	-0.36	
	Sub Total (B)	1320	953	1042	1060	22.59	941	22.87	-0.28	
C. NHPC	Chamera I HPS (3*180)	540	534	540	540	12.48	520	12.67	-0.19	
	Chamera II HPS (3*100)	300	300	305	305	7.27	303	7.20	0.07	
	Chamera III HPS (3*77)	231	229	227	233	5.31	221	5.19	0.12	
	Bairasuil HPS (3*60)	180	179	179	62	1.93	81	1.70	0.23	
	Salal-HPS (6*115)	690	648	672	672	16.19	675	15.55	0.63	
	Tanakpur-HPS (3*40)	94	92	95	93	2.25	94	2.20	0.05	
	Uri-I HPS (4*120)	480	354	439	364	9.05	377	8.51	0.54	
	Uri-II HPS (4*60)	240	198	233	196	4.98	207	4.74	0.23	
	Dhauliganga-HPS (4*70)	280	280	291	281	6.54	273	6.34	0.20	
	Dulhasti-HPS (3*130)	390	386	390	386	9.26	386	9.26	0.00	
	Sewa-II HPS (3*40)	120	119	75	0	0.87	36	0.83	0.05	
	Parbati 3 (4*130)	520	81	134	130	1.89	79	1.98	-0.09	
	Sub Total (C)	4065	3400	3580	3261	78	3251	76	2	
	D. SJVNL	NJPC (6*250)	1500	1605	1617	1622	38.75	1614	38.52	0.23
Rampur HEP (6*68.67)		412	428	426	432	10.36	432	10.27	0.08	
Sub Total (D)		1912	2033	2043	2054	49.10	2046	48.79	0.31	
E. THDC	Tehri HPS (4*250)	1000	1050	1056	694	10.23	426	10.00	0.23	
	Koteshwar HPS (4*100)	400	144	398	92	3.52	147	3.45	0.07	
	Sub Total (E)	1400	1194	1454	786	13.75	573	13.45	0.30	
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	895	1458	669	21.84	910	21.49	0.35	
	Dehar HPS (6*165)	990	585	825	560	13.99	583	14.04	-0.04	
	Pong HPS (6*66)	396	267	384	192	6.35	265	6.41	-0.06	
	Sub Total (F)	2765	1747	2667	1421	42.18	1758	41.94	0.24	
G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	110	110	2.62	109	2.49	0.13	
	KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	1105	1100	27.30	1137	26.92	0.38	
	Malana Stg-II HPS (2*50)	100	0	110	95	2.11	88	1.98	0.13	
	Shree Cement TPS (2*150)	300	0	298	299	7.06	294	7.01	0.06	
	Budhil HPS(IPP) (2*35)	70	0	76	38	1.52	63	1.53	-0.01	
Sub Total (G)	1662	0	1699	1643	40.61	1692	39.93	0.69		
H. Total Regional Entities (A-G)	25237	19886	21914	19194	456.09	19004	456.69	-0.60		

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	630	320	10.04	418	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	110	80	2.20	92	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	648	413	11.53	480	
	Goindwal(GVK)		0	0	0.00	0	
	Rajpura (2*700)	1400	1363	1382	31.69	1321	
	Talwandi Saboo (1*660)	660	0	0	0.00	0	
	Thermal (Total)	4700	2751	2195	55.46	2311	
	Total Hydro	1000	1073	1075	25.63	1068	
	Total Punjab	5700	3824	3270	81.10	3379	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	451	447	10.23	426
DCRTPP (Yamuna nagar) (2*300)		600	459	453	11.52	480	
Faridabad GPS (NTPC)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	790	742	20.96	873	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	404	369	10.12	422	
Thermal (Total)		4944	2104	2011	52.83	2201	
Total Hydro		62	8	25	0.38	16	
Total Haryana		5006	2112	2036	53.21	2217	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	835	937	22.69	946
		suratgarh TPS (6*250)	1500	899	900	19.91	830
		Chabra TPS (4*250)	1000	147	385	6.94	289
		Dholpur GPS (3*110)	330	80	79	1.94	81
	Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	162	162	4.11	171	
	RAPS A (NPC) (1*100+1*200)	300	159	158	3.94	164	
	Barsingsar (NLC) (2*125)	250	65	67	1.43	60	
	Giral LTPS (2*125)	250	0	57	0.62	26	
	Rajwest LTPS (IPP) (8*135)	1080	862	817	20.31	846	
	V/S LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	354	0	3.95	164	
	Kawai(Adani) (2*660)	1320	1185	1205	28.70	1196	
	Thermal (Total)	8876	4748	4767	115	4773	
	Total Hydro	550	294	114	2.07	86	
	Wind power	3214	378	860	12.66	528	
	Biomass	99	26	26	0.63	26	
	Solar	730	0	0	0.00	0	
	Renewable/Others (Total)	4043	404	886	13.29	554	
	Total Rajasthan	13469	5446	5767	129.91	5413	
	UP	Anpara TPS (3*210+2*500)	1630	1332	1229	30.91	1288
Obra TPS (2*50+2*94+5*200)		1194	381	358	9.25	385	
Panicha TPS (2*110+2*220+2*250)		1140	784	737	18.29	762	
Panki TPS (2*105)		210	68	72	1.73	72	
Harduaganj TPS (1*60+1*105+2*250)		665	445	437	10.47	436	
Tanda TPS (NTPC) (4*110)		440	188	165	4.47	186	
Roza TPS (IPP) (4*300)		1200	1085	1076	26.11	1088	
Anpara-C (IPP) (2*600)		1200	990	540	15.82	659	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	365	365	8.53	355	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(1*660)		660	0	281	3.01	125	
Thermal (Total)		9289	5638	5260	129	5358	
Vishnuparyag HPS (IPP)(4*110)		440	0	0	0.00	0	
Alakananda(4*82.5)		330	332	330	7.97	332	
Other Hydro		527	267	267	5.92	247	
Cogeneration		981	50	50	1.20	50	
Total UP		11567	6287	5907	144	5986	
Uttarakhand	Total Hydro	1398	918	943	22.34	931	
	Total Uttarakhand	1398	918	943	22.34	931	
Delhi	Rajghat TPS (2*67.5)	135	0	0	0.00	0	
	Delhi Gas Turbine (6x30 + 3x34)	282	33	32	0.79	33	
	Pragati Gas Turbine (2x104+ 1x122)	330	266	259	6.06	252	
	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	322	308	6.83	285	
	Thermal (Total)	2917	621	599	13.68	570	
	Total Delhi	2917	621	599	13.68	570	
HP	Baspa HPS (IPP) (3*100)	300	331	331	7.62	318	
	Malana HPS (IPP) (2*43)	86	86	61	1.80	75	
	Other Hydro	878	564	576	13.68	570	
	Total HP	1264	981	968	23.10	963	
J & K	Baglihar HPS (IPP) (3*150)	450	442	442	10.61	442	
	Other Hydro/IPP	560	176	152	3.74	156	
	Gas/Diesel/Others	190	0	0	0.00	0	
	Total J & K	1200	618	594	14.35	598	
Total State Control Area Generation		42521	20807	20084	481.35	20056	
J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]			7373	8552	186.84	7785	
Total Regional Availability(Gross)		67758	50094	47830	1124.29	46845	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	11912	9533	232.65	9694
State Control Area Hydro	6581	4491	4316	102	4240
Total Regional Hydro	18815	16403	13849	334.42	13934

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)	250	-100	250	-100	2.86	0.95	1.91
765 KV Gwalior-Agra (D/C)	2097	2179	2479	0	51.11	0.00	51.11
400 KV Zerda-Kankroli	-76	-90	0	210	0.00	2.87	-2.87
400 KV Zerda-Bhimmal	-37	-64	24	178	0.00	1.80	-1.80
220 KV Auraiya-Malanpur	-81	-68	0	98	0.00	1.67	-1.67
220 KV Badod-Kota/Morak	40	64	64	34	0.53	0.00	0.53
Mundra-Mohinderqarh(HVDC Bipole)	2101	2507	2519	0	45.71	0.00	45.71
400 KV Vindhychal - Rihand	500	499	505	0	11.84	0.00	11.84
765 kV Phagi-Gwalior (D/C)	1207	1256	665	0	28.95	0.00	28.95
Sub Total WR	6001	6183			140.99	7.29	133.70
Pusauli Bypass/HVDC	400	400	400	0	9.04	0.00	9.04
400 KV MZP- GKP (D/C)	226	524	675	0	11.10	0.00	11.10
400 KV Patna-Balia(D/C) X 2	104	334	410	0	6.84	0.00	6.84
400 KV B'Sharif-Balia (D/C)	3	211	330	0	4.46	0.00	4.46
765 KV Pusauli-Balia	18	136	172	0	1.08	0.00	1.08
765 KV Gaya-Fatehpur	262	280	423	0	7.64	0.00	7.64
220 KV Pusauli-Sahupuri	104	72	180	0	3.47	0.00	3.47
132 KV K'nasa-Sahupuri	0	0	0	0	0.48	0.00	0.48
132 KV Son Ngr-Rihand	-27	-40	0	44	0.00	0.90	-0.90
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	66	146	276	0	3.99	0.00	3.99
400 KV Barh -GKP (D/C)	216	306	310	0	5.94	0.00	5.94
Sub Total ER	1372	2369			54.04	0.90	53.14
Total IR Exch	7373	8552			195.03	8.19	186.84

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
24.77	3.94	28.71	21.77	8.83	6.60	-0.02	2.70	-2.70
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
59.79	107.40	167.18	53.14	133.70	186.84	-6.65	26.30	19.66

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	-16	-23	0	27	0	0	-0.42

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
0.000	0.000	1.410	24.750	72.130	65.690	8.020	1.970	0.000	0.000

<----- 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	49.950	0.076	0.073	50.200	49.880
50.150	18.02	49.710	9.18					

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	04:06	398	04:50	0.0	0.0	0.0	0.0
Gorakhpur	400	417	06:04	398	14:58	0.0	0.0	0.0	0.0
Bareilly	400	402	00:00	392	12:21	0.0	0.0	0.0	0.0
Kanpur	400	412	04:03	392	14:56	0.0	0.0	0.0	0.0
Dadri	400	408	06:01	388	14:51	0.0	1.1	0.0	0.0
Ballabgarh	400	414	06:01	387	14:55	0.0	1.4	0.0	0.0
Bawana	400	411	06:01	390	14:55	0.0	0.0	0.0	0.0
Bassi	400	417	18:05	397	11:37	0.0	0.0	0.0	0.0
Hissar	400	407	18:02	388	14:55	0.0	1.4	0.0	0.0
Moga	400	405	06:00	389	14:55	0.0	0.4	0.0	0.0
Abdullapur	400	406	06:00	383	14:55	0.0	18.5	0.0	0.0
Nalagarh	400	411	04:21	396	14:38	0.0	0.0	0.0	0.0
Kishenpur	400	413	08:03	401	14:59	0.0	0.0	0.0	0.0
Wagoora	400	406	21:59	385	19:45	0.0	8.0	0.0	0.0
Amritsar	400	407	04:24	389	14:59	0.0	0.2	0.0	0.0
Kashipur	400	416	05:07	406	14:55	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	399	18:02	110	12:09	52.6	72.6	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	768	04:02	731	14:57	0.0	13.0	0.0	0.0
Balia	765	769	08:03	734	12:30	0.0	14.3	0.0	0.0
Moga	765	777	06:01	744	14:55	0.0	0.0	0.0	0.0
Agra	765	782	04:02	746	14:56	0.0	0.0	0.0	0.0
Bhiwani	765	785	06:04	750	14:31	0.0	0.0	0.0	0.0
Unnao	765	757	05:08	722	14:57	6.1	56.1	0.0	0.0
Lucknow	765	771	08:03	732	14:55	0.0	15.6	0.0	0.0
Meerut	765	789	06:03	748	14:56	0.0	0.0	0.0	0.0
Jhatikara	765	786	06:01	744	14:55	0.0	0.0	0.0	0.0
Bareilly	765	787	20:01	0	17:07	29.8	29.8	0.0	0.0
Anta	765	787	18:02	770	00:18	0.0	0.0	0.0	0.0
Phagi	765	782	18:01	749	13:44	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	510.55	1575.10	509.75	1530.03	892.52	661.03
Pong	426.72	384.05	422.69	1020.81	416.28	730.66	377.52	360.67
Tehri	829.79	740.04	816.35	929.25	813.35	869.27	436.03	234.00
Koteshwar	612.50	598.50	610.58	4.69	610.74	4.97	234.00	231.86
Chamera-I	760.00	748.75	754.66	0.00	0.00	0.00	289.10	348.03
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	520.95	14.29	515.38	11.54	338.84	553.43

* 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	1373	170	0	1365	0	0	32.99	1.95	34.94
Delhi	461	333	0	444	106	0	10.94	6.33	17.26
Haryana	1635	265	0	1613	248	0	38.73	1.39	40.12
HP	-1109	-324	0	-908	-409	0	-22.83	-9.30	-32.13
J&K	-542	-424	0	-491	15	0	-12.28	-3.01	-15.29
CHD	0	0	0	0	0	0	0.24	0.19	0.43
Rajasthan	-498	1144	2	-498	628	2	-11.94	23.15	11.21
UP	358	0	0	304	0	0	8.36	0.00	8.36
Uttarakhand	-188	-111	0	-147	22	0	-3.68	-0.75	-4.43
Total	1491	1053	2	1682	609	2	40.52	19.96	60.47

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	1403	1358	173	0	0	0
Delhi	885	177	568	50	0	0
Haryana	1635	1591	266	-274	0	0
HP	-841	-1162	-324	-454	0	0
J&K	-491	-542	15	-424	0	0
CHD	29	0	39	0	0	0
Rajasthan	-498	-498	1433	521	2	2
UP	415	273	0	0	0	0
Uttarakhand	-136	-188	42	-111	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 27.08.2015 :

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 :