

पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पब्लिसिड की पूर्ण स्वायत्तता प्राप्त सार्वजनिक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 28.08.2015
Date of Reporting : 29.08.2015

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
49303	1976	51279	49.93	46054	2662	48716	50.03	1120.3	58.14

* 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	67.84	25.39		93.23	7988	117.54	0.17	210.77	0.00
Haryana	53.57	0.22		53.78	128.32	127.42	-0.89	181.21	0.00
Rajasthan	118.88	1.51	7.77	128.17	90.66	94.67	4.01	222.83	3.32
Delhi	16.74			16.74	99.03	97.86	-1.17	114.61	0.03
UP	140.12	12.67		152.79	136.70	134.06	-2.65	286.85	44.00
Uttarakhand		22.46		22.46	12.79	14.49	1.70	36.94	1.53
HP		23.39		23.39	1.64	2.09	0.44	25.47	0.83
J & K		14.74	0.00	14.74	19.23	20.84	1.60	35.57	8.44
Chandigarh				0.00	6.50	6.04	0.27	6.04	0.00
Total	397.15	100.37	7.77	505.29	612.24	615.00	3.48	1120.29	58.14

* 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	9618	0	83	1324	7988	0	-59	1445	9630
Haryana	8475	0	-242	1893	7912	0	356	1872	8632
Rajasthan	8872	0	235	666	9801	0	149	744	9978
Delhi	4788	0	-96	982	4608	0	39	832	5245
UP	12441	1450	-50	314	12321	2395	-30	358	12745
Uttarakhand	1787	75	209	-122	1310	0	-40	-174	1787
HP	1242	0	103	-1317	833	79	22	-1482	1242
J&K	1806	451	109	-526	1065	188	-40	-930	2128
Chandigarh	273	0	-31	0	215	0	-11	0	302
Total	49303	1976	321	3214	46054	2662	386	2665	49571

* 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 Net MU
A. NTPC	Singrauli STPS (5*200+2*500)	2000	1865	2012	2038	45.33	1889	44.75	0.58
	Rihand I STPS (2*500)	1000	885	977	964	20.99	875	21.03	-0.04
	Rihand II STPS (2*500)	1000	943	949	1027	22.67	945	22.40	0.27
	Rihand III STPS (2*500)	1000	480	499	510	11.40	475	11.32	0.08
	Dadri I STPS (4*210)	840	600	456	416	10.71	446	10.88	-0.17
	Dadri II STPS (2*490)	980	970	888	690	17.91	746	18.95	-1.05
	Unchahar I TPS (2*210)	420	400	419	385	8.81	367	9.34	-0.53
	Unchahar II TPS (2*210)	420	400	405	407	8.88	370	9.23	-0.34
	Unchahar III TPS (1*220)	210	200	203	215	4.42	184	4.56	-0.14
	ISTPP (Jhajjar) (3*500)	1500	1436	652	645	14.20	592	14.52	-0.31
	Dadri GPS (4*130.19+2*154.51)	830	660	167	243	4.51	188	4.73	-0.22
	Anta GPS (3*88.71+1*153.2)	419	396	218	245	5.59	233	5.57	0.01
	Auraiya GPS (4*111.19+2*109.30)	663	636	304	205	6.12	255	6.18	-0.06
	Dadri Solar	5	1	0	0	0.02	1	0.03	-0.01
	Unchahar Solar	10	3	0	0	0.02	1	0.06	-0.04
	Singrauli Solar	15	3	0	0	0.00	0	0.08	-0.07
	KHEP	800	845	846	710	17.59	733	17.36	0.23
	Sub Total (A)	12112	10723	8995	8700	199	8299	201	-2
	B. NPC	NAPS (2*220)	440	366	403	419	8.97	374	8.78
RAPS- B (2*220)		440	187	212	212	4.43	184	4.49	-0.06
RAPS- C (2*220)		440	400	433	430	9.24	385	9.60	-0.36
Sub Total (B)		1320	953	1048	1061	22.63	943	22.87	-0.24
C. NHPC	Chamera I HPS (3*180)	540	534	539	509	12.70	529	12.58	0.11
	Chamera II HPS (3*100)	300	298	304	306	6.99	291	7.10	-0.11
	Chamera III HPS (3*77)	231	229	231	232	5.61	234	5.50	0.11
	Bairasuil HPS (3*60)	180	179	178	63	2.08	86	1.76	0.31
	Salal-HPS (6*115)	690	648	672	672	16.19	674	15.55	0.63
	Tanakpur-HPS (3*40)	94	90	94	93	2.25	94	2.16	0.09
	Uri-I HPS (4*120)	480	345	453	265	8.61	359	8.29	0.32
	Uri-II HPS (4*60)	240	192	233	203	4.74	198	4.60	0.14
	Dhauliganga-HPS (4*70)	280	280	281	293	6.89	287	6.72	0.17
	Dulhasti-HPS (3*130)	390	386	400	396	9.37	391	9.26	0.11
	Sewa-II HPS (3*40)	120	119	126	0	0.93	39	0.80	0.13
	Parbati 3 (4*130)	520	175	130	130	3.12	130	3.12	0.00
	Sub Total (C)	4065	3475	3641	3162	79	3312	77	2
	D. SJVNL	NJPC (6*250)	1500	1605	1621	1623	38.72	1613	38.52
Rampur HEP (6*68.67)		412	428	426	434	10.29	429	10.27	0.02
Sub Total (D)		1912	2033	2047	2057	49.01	2042	48.79	0.22
E. THDC	Tehri HPS (4*250)	1000	1050	1055	493	10.21	425	10.00	0.21
	Koteshwar HPS (4*100)	400	144	401	90	3.65	152	3.60	0.05
	Sub Total (E)	1400	1194	1456	583	13.86	577	13.60	0.26
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	898	1463	669	21.78	907	21.54	0.23
	Dehar HPS (6*165)	990	581	825	560	13.96	582	13.94	0.03
	Pong HPS (6*66)	396	260	384	186	6.17	257	6.23	-0.07
	Sub Total (F)	2765	1738	2672	1415	41.91	1746	41.71	0.19
G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	108	108	2.75	114	2.65	0.10
	KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	1160	1150	27.72	1155	27.60	0.12
	Malana Stg-II HPS (2*50)	100	0	111	95	2.20	92	2.06	0.14
	Shree Cement TPS (2*150)	300	0	293	300	7.03	293	7.07	-0.03
	Budhil HPS(IPP) (2*35)	70	0	76	46	1.58	66	1.57	0.01
Sub Total (G)	1662	0	1747	1699	41.28	1720	40.94	0.34	
H. Total Regional Entities (A-G)	25237	20116	21606	18677	447.35	18640	446.36	0.99	

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	480	14.81	617	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	301	90	4.18	174	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	930	595	17.29	720	
	Goindwal(GVK)		0	0	0.00	0	
	Rajpura (2*700)	1400	1374	1381	31.57	1315	
	Talwandi Saboo (1*660)	660	0	0	0.00	0	
	Thermal (Total)	4700	3445	2546	67.84	2827	
	Total Hydro	1000	1071	986	25.39	1058	
	Total Punjab	5700	4516	3532	93.23	3885	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	460	448	10.16	424
DCRTPP (Yamuna nagar) (2*300)		600	541	452	11.59	483	
Faridabad GPS (NTPC)		432	0	0	0.00	0	
RGTPP (khedar) (IPP) (2*600)		1200	1126	756	21.49	896	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	540	372	10.32	430	
Thermal (Total)		4944	2667	2028	53.57	2232	
Total Hydro		62	9	9	0.22	9	
Total Haryana		5006	2676	2037	53.78	2241	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	888	1058	22.34	931
		suratgarh TPS (6*250)	1500	846	898	21.05	877
		Chabra TPS (4*250)	1000	146	171	3.93	164
		Dholpur GPS (3*110)	330	80	79	1.92	80
		Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)	271	211	167	5.07	211
	RAPS A (NPC) (1*100+1*200)	300	160	161	3.98	166	
	Barsingsar (NLC) (2*125)	250	69	69	1.46	61	
	Giral LTPS (2*125)	250	0	0	0.00	0	
	Rajwest LTPS (IPP) (8*135)	1080	917	873	21.73	905	
	V/S LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	413	415	9.87	411	
	Kawai (Adani) (2*660)	1320	1175	1200	27.54	1148	
	Thermal (Total)	8876	4905	5091	119	4953	
	Total Hydro	550	144	66	1.51	63	
	Wind power	3214	84	569	5.34	223	
	Biomass	99	19	19	0.47	19	
	Solar	730	0	0	1.96	82	
	Renewable/Others (Total)	4043	103	588	7.77	324	
	Total Rajasthan	13469	5152	5745	128.17	5340	
	UP	Anpara TPS (3*210+2*500)	1630	1272	1294	30.60	1275
Obra TPS (2*50+2*94+5*200)		1194	407	401	9.50	396	
Panicha TPS (2*110+2*220+2*250)		1140	764	758	18.50	771	
Panki TPS (2*105)		210	59	72	1.30	54	
Harduaganj TPS (1*60+1*105+2*250)		665	428	440	10.40	433	
Tanda TPS (NTPC) (4*110)		440	185	188	4.44	185	
Roza TPS (IPP) (4*300)		1200	1080	1080	26.05	1085	
Anpara-C (IPP) (2*600)		1200	1076	1080	25.99	1083	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	365	365	8.53	356	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(1*660)		660	331	0	3.61	150	
Thermal (Total)		9289	5967	5678	139	5788	
Vishnuparyag HPS (IPP)(4*110)		440	0	0	0.00	0	
Alakananda(4*82.5)		330	330	330	7.97	332	
Other Hydro		527	185	267	4.70	196	
Cogeneration		981	50	50	1.20	50	
Total UP		11567	6532	6325	153	6366	
Uttarakhand	Total Hydro	1398	871	921	22.46	936	
	Total Uttarakhand	1398	871	921	22.46	936	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.05	-2	
	Delhi Gas Turbine (6x30 + 3x34)	282	32	33	0.79	33	
	Pragati Gas Turbine (2x104+ 1x122)	330	262	266	6.39	266	
	Riithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	0	0	-0.11	-4	
	Badarpur TPS (NTPC) (3*95+2*210)	705	318	311	9.72	405	
	Thermal (Total)	2917	612	610	16.74	698	
	Total Delhi	2917	612	610	16.74	698	
HP	Baspa HPS (IPP) (3*100)	300	334	304	7.62	317	
	Malana HPS (IPP) (2*43)	86	87	87	1.97	82	
	Other Hydro	878	578	580	13.80	575	
	Total HP	1264	999	971	23.39	974	
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	21974	20750	505.29	21054	
J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]			8033	8378	192.09	8004	
Total Regional Availability(Gross)		67758	51613	47805	1144.74	47697	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	12040	9280	234.52	9772
State Control Area Hydro	6581	4225	4159	100	4182
Total Regional Hydro	18815	16265	13439	334.89	13954

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	150	250	0	4.81	0.00	4.81
765 KV Gwalior-Agra (D/C)	2296	2276	2365	0	47.01	0.00	47.01
400 KV Zerda-Kankroli	-46	-39	0	205	0.00	2.26	-2.26
400 KV Zerda-Bhimmal	16	7	56	145	0.00	0.66	-0.66
220 KV Auraiya-Malanpur	-58	-46	0	91	0.00	1.27	-1.27
220 KV Badod-Kota/Morak	3	38	38	64	0.04	0.00	0.04
Mundra-Mohinderqarh(HVDC Bipole)	2499	2304	2508	0	57.29	0.00	57.29
400 KV Vindhychal - Rihand	502	511	511	0	12.01	0.00	12.01
765 kV Phagi-Gwalior (D/C)	1139	1167	1322	0	26.71	0.00	26.71
Sub Total WR	6601	6368			147.88	4.19	143.69
Pusauli Bypass/HVDC	200	400	400	0	6.98	0.00	6.98
400 KV MZP- GKP (D/C)	260	413	498	0	9.85	0.00	9.85
400 KV Patna-Balia(D/C) X 2	265	238	474	0	7.56	0.00	7.56
400 KV B'Sharif-Balia (D/C)	138	140	368	0	4.74	0.00	4.74
765 KV Pusauli-Balia	138	81	235	0	1.47	0.00	1.47
765 KV Gaya-Fatehpur	133	254	385	0	6.28	0.00	6.28
220 KV Pusauli-Sahupuri	164	148	209	0	3.68	0.00	3.68
132 KV K'nasa-Sahupuri	0	0	0	0	0.48	0.00	0.48
132 KV Son Ngr-Rihand	-36	-42	0	42	0.00	0.90	-0.90
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-1	90	264	78	3.12	0.00	3.12
400 KV Barh -GKP (D/C)	171	288	288	0	5.14	0.00	5.14
Sub Total ER	1432	2010			49.31	0.90	48.41
Total IR Exch	8033	8378			197.18	5.09	192.09

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
29.28	3.96	33.23	23.19	12.71	20.13	0.00	2.85	-2.85
Total IR Schedule (MU)								
Through ER	Through WR Incids Mndra	Total	Through ER	Through WR	Total	Through ER	Through WR	Total
79.41	109.03	188.44	48.41	143.69	192.09	-31.00	34.66	3.65

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	-17	0	0	26	0	0	-0.20

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	0.640	11.210	62.950	77.990	9.220	2.090	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)
50.160	5.04	49.750	22.06	49.980	0.045	0.063	50.170	49.930

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	404	08:09	397	11:16	0.0	0.0	0.0	0.0
Gorakhpur	400	418	08:01	396	11:29	0.0	0.0	0.0	0.0
Bareilly	400	394	00:00	394	00:00	0.0	0.0	0.0	0.0
Kanpur	400	410	04:03	391	11:14	0.0	0.0	0.0	0.0
Dadri	400	410	04:00	392	11:10	0.0	0.0	0.0	0.0
Ballabgarh	400	412	04:01	390	11:14	0.0	0.0	0.0	0.0
Bawana	400	411	04:02	392	11:14	0.0	0.0	0.0	0.0
Bassi	400	418	18:02	390	11:14	0.0	0.0	0.0	0.0
Hissar	400	408	18:02	389	11:10	0.0	0.8	0.0	0.0
Moga	400	405	04:01	390	11:10	0.0	0.0	0.0	0.0
Abdullapur	400	403	18:30	388	11:13	0.0	3.9	0.0	0.0
Nalagarh	400	412	04:05	395	14:54	0.0	0.0	0.0	0.0
Kishenpur	400	414	04:00	398	20:15	0.0	0.0	0.0	0.0
Wagoora	400	409	03:10	383	20:11	0.0	9.4	0.0	0.0
Amritsar	400	407	04:07	163	07:09	0.0	0.0	0.0	0.0
Kashipur	400	416	08:14	407	11:14	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	408	04:02	383	12:11	0.0	30.6	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	08:03	730	11:14	0.0	13.2	0.0	0.0
Balia	765	770	08:02	734	12:15	0.0	10.2	0.0	0.0
Moga	765	778	04:02	746	11:14	0.0	0.0	0.0	0.0
Agra	765	784	18:01	745	11:13	0.0	0.0	0.0	0.0
Bhiwani	765	784	18:01	751	11:10	0.0	0.0	0.0	0.0
Unnao	765	753	05:07	715	11:38	21.6	68.0	0.0	0.0
Lucknow	765	773	08:04	733	12:15	0.0	11.2	0.0	0.0
Meerut	765	792	04:03	752	11:14	0.0	0.0	0.0	0.0
Jhatikara	765	782	08:01	749	11:08	0.0	0.0	0.0	0.0
Bareilly	765	784	05:07	742	11:14	0.0	0.0	0.0	0.0
Anta	765	785	04:03	761	11:20	0.0	0.0	0.0	0.0
Phagi	765	784	18:03	743	11:35	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	510.73	1590.18	509.78	1530.03	978.35	653.24
Pong	426.72	384.05	422.72	1020.81	416.26	730.66	449.27	348.18
Tehri	829.79	740.04	816.75	940.00	813.80	880.00	431.54	232.00
Koteshwar	612.50	598.50	610.35	4.69	610.57	4.97	232.00	240.74
Chamera-I	760.00	748.75	753.90	0.00	0.00	0.00	275.86	344.47
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	520.68	14.06	514.83	11.49	338.84	562.06

* 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	109	0	1314	10	0	31.96	1.47	33.43
Delhi	517	315	0	691	292	0	14.69	8.91	23.60
Haryana	1635	237	0	1687	206	0	39.46	-0.51	38.95
HP	-1109	-373	0	-908	-409	0	-22.83	-9.65	-32.48
J&K	-592	-338	0	-491	-35	0	-12.84	-1.94	-14.78
CHD	0	0	0	0	0	0	0.24	0.15	0.38
Rajasthan	-254	996	2	-254	919	2	-6.10	31.62	25.52
UP	358	0	0	314	0	0	8.40	0.00	8.40
Uttarakhand	-188	14	0	-147	24	0	-3.68	0.42	-3.26
Total	1704	959	2	2204	1008	2	49.28	30.47	79.76

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	1342	1314	148	9	0	0
Delhi	1188	233	828	127	0	0
Haryana	1687	1635	237	-442	0	0
HP	-841	-1162	-356	-460	0	0
J&K	-491	-592	40	-338	0	0
CHD	29	0	49	0	0	0
Rajasthan	-254	-254	1804	447	2	2
UP	415	273	0	0	0	0
Uttarakhand	-136	-188	45	14	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 28.08.2015 :

Normal

XIV. Synchronisation of new generating units :

XV. Synchronisation of new 220 / 400 / 765 KV lines and energising of bus / /substation :
 765/400 kV Bareilly ICT-2 first time test charged from 400 kV side on no load at 23:08 hrs date 28-08-2015
 Filter Sub-bank Z1Z2 (400kV)-125MVar (Capacitive) first time test charged at 19:44 hrs.

XVI. Tripping of lines in pooling stations :

XVII. Complete generation loss in a generating station :