

पॉवर सिस्टम ऑपरेशन कार्पोरेशन लिमिटेड

(पावरसिड की पूर्ण स्वामित्व प्राप्त सहायक कंपनी)



उत्तरी क्षेत्रीय भार प्रेषण केंद्र

CIN: U40105DL2009GOI188682

Power Supply Position in Northern Region for 24.10.2015

Date of Reporting : 25.10.2015

I. Regional Availability/Demand:

Demand Met	Evening Peak (19:00 Hrs) MW			Demand Met	Off Peak (03:00 Hrs) MW			Day Energy (Net MU)	
	Shortage	Requirement	Freq* (Hz)		Shortage	Requirement	Freq* (Hz)	Demand Met	Shortage
39091	1038	40129	50.12	33842	1448	35290	50.12	851.2	13.79

* 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	46.99	12.22		59.22	45.66	46.37	0.71	105.59	0.00
Haryana	64.98	0.17		65.15	58.70	58.83	0.14	123.98	0.00
Rajasthan	130.05	3.99	14.83	148.87	61.41	63.94	2.53	212.81	0.00
Delhi	14.05			14.05	54.77	52.60	-2.17	66.65	0.01
UP	133.54	8.20		141.74	106.17	101.84	-4.33	243.58	13.78
Uttarakhand		11.49		11.49	19.74	21.90	2.15	33.38	0.00
HP		7.62		7.62	16.51	17.00	0.49	24.62	0.00
J & K		8.47	0.00	8.47	27.75	28.68	0.93	37.14	0.00
Chandigarh				0.00	3.81	3.48	0.27	3.48	0.00
Total	389.61	52.15	14.83	456.60	394.53	394.65	0.72	851.24	13.79

* 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	4747	0	58	-520	3863	0	-5	-602	4897
Haryana	6963	0	-7	-327	4074	0	64	-321	6963
Rajasthan	8636	0	-233	-77	9080	0	227	925	9662
Delhi	3253	0	-136	-87	2500	0	22	-354	3426
UP	10664	610	-384	65	10394	1130	-77	148	11495
Uttarakhand	1705	0	187	289	1211	0	145	197	1705
HP	1221	0	42	-320	811	0	34	132	1257
J&K	1712	428	-98	221	1802	318	589	221	1884
Chandigarh	190	0	-12	-40	107	0	-19	0	190
Total	39091	1038	-584	-798	33842	1448	979	346	39280

* STOA figures are at sellers boundary & PX figures are at regional boundary.

figures may not be at simultaneous hour.

Diversity is 1.06

III. Regional Entities :

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	1888	1935	1890	44.79	1866	44.74	0.06	
Rihand I STPS (2*500)	1000	870	723	897	18.42	768	18.40	0.03	
Rihand II STPS (2*500)	1000	900	667	760	17.80	742	17.67	0.12	
Rihand III STPS (2*500)	1000	480	415	425	10.42	434	10.42	0.00	
Dadri I STPS (4*210)	840	800	142	148	3.54	147	3.55	-0.02	
Dadri II STPS (2*490)	980	970	663	688	15.77	657	16.30	-0.53	
Uncharhar I TPS (2*210)	420	200	151	139	3.23	134	3.67	-0.44	
Uncharhar II TPS (2*210)	420	263	298	136	4.14	173	4.41	-0.27	
Uncharhar III TPS (1*220)	210	200	140	131	3.03	126	3.37	-0.35	
ISTPP (Jhajjar) (3*500)	1500	960	630	623	13.69	570	14.06	-0.37	
Dadri GPS (4*130.19+2*154.51)	830	607	448	455	10.55	440	10.67	-0.12	
Anta GPS (3*88.71+1*153.2)	419	409	-1	-1	0.00	0	0.00	0.00	
Auraiya GPS (4*111.19+2*109.30)	663	641	245	246	5.74	239	5.76	-0.02	
Dadri Solar	5	1	0	0	0.00	0	0.02	-0.02	
Uncharhar Solar	10	3	0	0	0.00	0	0.06	-0.06	
Singrauli Solar	15	3	0	0	0.00	0	0.08	-0.08	
KHEP	800	865	522	0	4.28	178	4.01	0.27	
Sub Total (A)	12112	10059	6978	6537	155	6474	157	-2	
B. NPC									
NAPS (2*220)	440	399	436	445	9.53	397	9.58	-0.04	
RAPS- B (2*220)	440	392	440	441	9.58	399	9.41	0.17	
RAPS- C (2*220)	440	210	444	448	9.59	399	9.13	0.46	
Sub Total (B)	1320	1001	1320	1334	28.70	1196	28.11	0.59	
C. NHPC									
Chamera I HPS (3*180)	540	540	542	180	9.18	383	8.94	0.24	
Chamera II HPS (3*100)	300	300	303	0	2.28	95	2.15	0.14	
Chamera III HPS (3*77)	231	229	225	0	1.44	60	1.30	0.13	
Bairasuli HPS(3*60)	180	179	174	0	0.67	28	0.63	0.04	
Salal-HPS (6*115)	690	263	416	300	7.28	304	6.27	1.01	
Tanakpur-HPS (3*40)	94	41	33	51	1.10	46	0.98	0.11	
Uri-I HPS (4*120)	480	294	326	268	7.66	319	7.07	0.60	
Uri-II HPS (4*60)	240	181	201	120	4.48	187	4.34	0.14	
Dhauliganga-HPS (4*70)	280	280	278	0	1.75	73	1.65	0.10	
Dulhasti-HPS (3*130)	390	387	389	123	5.91	246	5.50	0.41	
Sewa-II HPS (3*40)	120	119	111	0	0.70	29	0.65	0.05	
Parbati 3 (4*130)	520	260	0	0	0.81	34	0.71	0.10	
Sub Total (C)	4065	3072	2997	1042	43	1802	40	3	
D.SJVNL									
NJPC (6*250)	1500	1605	1384	0	12.62	526	12.69	-0.07	
Rampur HEP (6*68.67)	412	360	375	0	3.56	148	3.44	0.12	
Sub Total (D)	1912	1965	1759	0	16.17	674	16.12	0.05	
E. THDC									
Tehri HPS (4*250)	1000	1080	973	0	6.56	273	6.20	0.36	
Koteshwar HPS (4*100)	400	92	99	89	2.22	93	2.20	0.02	
Sub Total (E)	1400	1172	1072	89	8.78	366	8.40	0.38	
F. BBMB									
Bhakra HPS (2*108+3*126+5*157)	1379	549	1043	369	13.63	568	13.17	0.46	
Dehar HPS (6*165)	990	220	660	140	5.49	229	5.29	0.21	
Pong HPS (6*66)	396	232	318	198	5.57	232	5.56	0.01	
Sub Total (F)	2765	1001	2021	707	24.69	1029	24.02	0.67	
G. IPP(s)/JV(s)									
ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	55	0	0.89	37	0.86	0.03	
KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	800	250	6.76	282	6.96	-0.19	
Malana Stg-II HPS (2*50)	100	0	0	0	0.29	12	0.27	0.01	
Shree Cement TPS (2*150)	300	0	0	0	6.23	260	6.23	0.00	
Budhil HPS(IPP) (2*35)	70	0	75	0	0.34	14	0.34	-0.01	
Sub Total (G)	1662	0	930	250	14.50	604	14.66	-0.15	
H. Total Regional Entities (A-G)	25237	18270	17077	9960	291.49	12146	288.70	2.80	

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	320	370	7.35	306
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	90	100	2.19	91
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	204	200	4.75	198
	Goindwal(GVK)		0	0	0.00	0
	Rajpura (2*700)	1400	702	700	19.11	796
	Talwandi Saboo (2*660)	1320	820	630	13.59	566
	Thermal (Total)	5360	2136	2000	46.99	1958
Total Hydro	1000	391	460	12.22	509	
Total Punjab	6360	2527	2460	59.22	2467	
Haryana	Panipat TPS (4*110+2*210+2*250)	1367	456	438	10.23	426
	DCRTPP (Yamuna nagar) (2*300)	600	578	473	11.52	480
	Faridabad GPS (NTPC)	432	183	193	4.51	188
	RGTTP (khedar) (IPP) (2*600)	1200	1142	762	19.92	830
	Magnum Diesel (IPP)	25	0	0	0.00	0
	Jhajjar(CLP) (2*660)	1320	1152	740	18.81	784
	Thermal (Total)	4944	3511	2606	64.98	2707
	Total Hydro	62	6	6	0.17	7
	Total Haryana	5006	3517	2612	65.15	2714
	Rajasthan	kota TPS (2*110+2*195+3*210)	1240	1010	1013	24.45
suratgarh TPS (6*250)		1500	985	986	24.10	1004
Chabra TPS (4*250)		1000	190	190	4.74	197
Dholpur GPS (3*110)		330	0	0	0.00	0
Ramgarh GPS (1*37.5 + 1*35.5 +2*37.5 +1*110 +1*50)		271	188	180	4.74	198
RAPS A (NPC) (1*100+1*200)		300	157	159	3.93	164
Barsingar (NLC) (2*125)		250	188	171	4.14	173
Giral LTPS (2*125)		250	0	0	0.00	0
Rajwest LTPS (IPP) (8*135)		1080	626	717	16.25	677
VS LIGNITE LTPS (IPP) (1*135)		135	0	0	0.00	0
Kalisindh Thermal(2*600)		1200	1044	950	22.60	942
Kawati(Adani) (2*660)		1320	924	1066	25.11	1046
Thermal (Total)		8876	5312	5432	130	5419
Total Hydro		550	159	219	3.99	166
Wind power		3214	515	363	10.96	457
Biomass		99	26	26	0.63	26
Solar		730	0	0	3.25	135
Renewable/Others (Total)		4043	541	389	14.83	618
Total Rajasthan		13469	6012	6040	148.87	6203
UP		Anpara TPS (3*210+2*500)	1630	1359	1385	32.30
	Obra TPS (2*50+2*94+5*200)	1194	425	464	10.30	429
	Paricha TPS (2*110+2*220+2*250)	1140	649	643	14.90	621
	Panki TPS (2*105)	210	68	9	1.10	46
	Haridwar TPS (1*60+1*105+2*250)	665	497	475	11.20	467
	Tanda TPS (NTPC) (4*110)	440	295	276	7.04	293
	Roza TPS (IPP) (4*300)	1200	837	1107	20.70	863
	Anpara-C (IPP) (2*600)	1200	659	1080	19.40	808
	Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)	450	225	283	6.00	250
	Anpara-D(1*500)	500	0	0	0.00	0
	Lalitpur TPS(1*660)	660	393	0	8.20	342
	Thermal (Total)	9289	5407	5722	131	5464
	Vishnuparyag HPS (IPP)(4*110)	440	167	162	3.80	158
	Alakanada(4*82.5)	330	112	85	2.40	100
	Other Hydro	527	54	100	2.00	83
	Cogeneration	981	100	100	2.40	100
	Total UP	11567	5840	6169	142	5906
Uttarakhand	Total Hydro	1398	523	444	11.49	479
	Total Uttarakhand	1398	523	444	11.49	479
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.01	0
	Delhi Gas Turbine (6x30 + 3x34)	282	38	36	0.91	38
	Pragati Gas Turbine (2x104+ 1x122)	330	152	154	3.66	153
	Rithala GPS (3*36)	95	0	0	0.00	0
	Bawana GPS (4*216+2*253)	1370	248	250	5.98	249
	Badarpur TPS (NTPC) (3*95+2*210)	705	157	163	3.51	146
	Thermal (Total)	2917	594	603	14.05	585
	Total Delhi	2917	594	603	14.05	585
HP	Baspa HPS (IPP) (3*100)	300	32	63	2.09	87
	Malana HPS (IPP) (2*43)	86	0	0	0.36	15
	Other Hydro	878	214	208	5.17	216
	Total HP	1264	246	271	7.62	317
J & K	Baglihar HPS (IPP) (3*150)	450	300	240	6.12	255
	Other Hydro/IPP	560	110	91	2.35	98
	Gas/Diesel/Others	190	0	0	0.00	0
	Total J & K	1200	410	331	8.47	353
Total State Control Area Generation		43181	19669	18930	456.60	19025
J. Net Inter Regional Exchange (Import (+ve)/Export (-ve))			749	598	131.65	5485
Total Regional Availability(Gross)		68418	37495	29488	879.74	36656

IV. Total Hydro Generation:

Regional Entities Hydro	12234	9226	2089	105.12	4380
State Control Area Hydro	6581	2068	2078	52	2173
Total Regional Hydro	18815	11294	4167	157.27	6553

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	
Vindhychal(HVDC B/B)	-250	-100	0	-250	0.00	-4.95	4.95
765 KV Gwalior-Agra (D/C)	-1527	-1758	1992	0	38.82	0.00	38.82
400 KV Zerda-Kankrol	-208	-141	0	306	0.00	4.07	-4.07
400 KV Zerda-Bhinmal	-189	-102	14	317	0.00	3.32	-3.32
220 KV Auraiya-Malanpur	-98	-119	0	153	0.00	2.60	-2.60
220 KV Badoh-Kota/Morak	-119	-127	0	189	0.00	3.25	-3.25
Mundra-Mohindergarh(HVDC Bipole)	2498	1401	2506	0	50.77	0.00	50.77
400 KV Vindhychal - Rihand	0	0	0	0	0.00	0.00	0.00
765 kV Phagi-Gwalior (D/C)	354	732	793	0	14.24	0.00	14.24
Sub Total WR	461	-214			103.83	8.30	95.53
Pusauli Bypass/HVDC	400	400	400	0	8.99	0.00	8.99
400 KV MZP- GKP (D/C)	10	0	420	96	5.85	0.00	5.85
400 KV Patna-Balia(D/C) X 2	148	254	426	0	6.81	0.00	6.81
400 KV B'Shanif-Balia (D/C)	-55	74	218	-67	2.25	0.00	2.25
765 KV Gaya-Balia	27	56	192	-10	1.14	0.00	1.14
765 KV Gaya-Fatehpur	-52	174	261	52	3.49	0.00	3.49
220 KV Pusauli-Sahupuri	173	112	173	0	2.73	0.00	2.73
132 KV K'nasa-Sahupuri	0	0	0	0	0.00	0.00	0.00
132 KV Son Ngr-Rihand	-20	-27	0	34	0.00	0.36	-0.36
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-210	19	127	210	0.09	0.00	0.09
400 KV Barh -GKP (D/C)	-133	-250	274	0	5.14	0.00	5.14
Sub Total ER	288	812			36.48	0.36	36.12
+/- 800 KV BiswanathChariali-Agra	0	0	0	0	0.00	0.00	0.00
Sub Total NER	0	0			0.00	0.00	0.00
Total IR Exch	749	598			140.30	8.65	131.65

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

ER	ISGS/LT Schedule (MU)		Bilateral Schedule (MU)			Power Exchange Shdi (MU)		Wheeling (MU)	
	Bhutan	Total	Through ER	Through WR	Total	Through ER	Through WR	Through ER	Through WR
32.49	1.68	34.17	2.87	-21.49	15.26	2.60	1.49	-1.49	
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	
53.79	68.99	122.78	36.12	95.53	131.65	-17.67	26.54	8.87	

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	0	0	0	0	0	0	0.00

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	0.19	6.11	45.38	72.63	16.31	5.02	0.00	0.00

<----- Frequency (Hz) ----->				Average Frequency	Frequency Variation Index	Std. Dev.	Frequency in 15 Min Block	
Maximum		Minimum					MAX	MIN
Freq	Time	Freq	Time	Hz	(Hz)	(Hz)		
50.19	6.02	49.76	11.07	50.00	0.038	0.062	50.17	49.96

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	400	00:00	0.0	0.0	0.0	0.0
Gorakhpur	400	422	15:04	410	22:06	0.0	0.0	6.6	0.0
Bareilly	400	415	02:44	404	11:08	0.0	0.0	0.0	0.0
Kanpur	400	411	02:58	413	00:08	0.0	0.0	0.0	0.0
Dadri	400	421	02:39	405	18:14	0.0	0.0	1.5	0.0
Ballabgarh	400	427	02:59	409	18:09	0.0	0.0	29.7	0.0
Bawana	400	425	02:55	406	18:15	0.0	0.0	16.8	0.0
Bassi	400	423	05:02	404	10:50	0.0	0.0	3.6	0.0
Hissar	400	419	02:39	283	10:01	4.0	4.0	0.0	0.0
Moga	400	423	02:32	404	18:10	0.0	0.0	10.4	0.0
Abdullapur	400	425	02:41	403	18:12	0.0	0.0	17.1	0.0
Nalagarh	400	435	02:43	410	18:14	0.0	0.0	43.9	12.6
Kishenpur	400	426	03:02	401	18:16	0.0	0.0	11.9	0.0
Wagoora	400	412	03:46	385	07:08	0.0	12.3	0.0	0.0
Amritsar	400	428	02:17	407	11:07	0.0	0.0	23.7	0.0
Kashipur	400	418	02:24	412	11:07	0.0	0.0	0.0	0.0
Hamirpur	400	427	02:42	403	18:24	0.0	0.0	27.2	0.0
Rishikesh	400	411	02:54	386	11:41	0.0	8.1	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	774	03:00	755	11:07	0.0	0.0	0.0	0.0
Balia	765	779	13:35	762	22:09	0.0	0.0	0.0	0.0
Moga	765	800	02:59	785	00:03	0.0	0.0	0.0	0.0
Agra	765	791	21:29	768	11:06	0.0	0.0	0.0	0.0
Bhiwani	765	801	02:17	789	00:00	0.0	0.0	90.5	0.0
Unnao	765	762	08:07	749	10:50	0.0	0.0	0.0	0.0
Lucknow	765	777	03:02	766	00:06	0.0	0.0	0.0	0.0
Meerut	765	808	02:59	775	18:14	0.0	0.0	11.3	0.0
Jhatikara	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Bareilly	765	0	00:00	9999	00:00	0.0	0.0	0.0	0.0
Anta	765	780	21:26	765	09:26	0.0	0.0	0.0	0.0
Phagi	765	792	21:32	768	11:03	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	509.73	1530.03	507.79	1440.82	273.14	366.82
Pong	426.72	384.05	419.13	848.35	414.51	656.23	77.90	328.62
Tehri	829.79	740.04	818.80	978.25	824.00	1086.79	87.62	147.00
Koteshwar	612.50	598.50	610.73	4.94	608.92	3.98	147.00	146.44
Chamera-I	760.00	748.75	757.95	0.00	0.00	0.00	144.58	248.37
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	511.97	50.08	510.61	2.96	53.60	161.44

* 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	-698	96	0	-699	179	0	-13.47	3.62	-9.85
Delhi	-221	-133	0	-151	64	0	-4.67	1.28	-3.39
Haryana	-548	227	0	-548	221	0	-13.11	3.20	-9.91
HP	-50	182	0	127	-448	0	1.34	-0.79	0.54
J&K	221	0	0	221	0	0	5.41	0.07	5.49
CHD	0	0	0	0	-40	0	0.00	-0.14	-0.14
Rajasthan	-5	928	2	-5	-74	2	1.63	14.99	16.62
UP	148	0	0	65	0	0	2.15	0.00	2.15
Uttarakhand	197	0	0	197	92	0	4.72	2.40	7.12
Total	-957	1301	2	-794	-6	2	-16.00	24.63	8.62

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	-295	-699	200	90	0	0
Delhi	-151	-221	327	-242	0	0
Haryana	-525	-548	233	-306	0	0
HP	127	-50	182	-618	0	0
J&K	236	221	124	-50	0	0
CHD	0	0	30	-60	0	0
Rajasthan	190	-5	1219	-490	2	2
UP	212	-12	0	0	0	0
Uttarakhand	197	197	286	0	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 24.10.2015 :
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 :