

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 18.08.2015
Date of Reporting : 19.08.2015

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
42861	2062	44924	49.99	40616	2382	42998	50.09	993.4	53.31

* 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	53.64	25.67		79.31	125.05	124.92	-0.13	204.24	0.00
Haryana	20.83	0.58		21.41	128.09	125.82	-2.27	147.23	0.00
Rajasthan	71.66	7.09	23.51	102.26	63.98	64.73	0.76	166.99	0.00
Delhi	10.96			10.96	89.98	88.20	-1.78	99.16	0.10
UP	107.37	13.40		120.77	149.06	149.04	-0.02	269.81	44.73
Uttarakhand		23.09		23.09	14.80	14.80	0.00	37.89	0.00
HP		24.51		24.51	0.70	1.79	1.08	26.30	0.00
J & K		15.04	0.00	15.04	21.00	20.68	-0.32	35.72	8.49
Chandigarh				0.00	6.48	6.11	0.27	6.11	0.00
Total	264.46	109.39	23.51	397.36	597.12	596.09	-0.39	993.45	53.31

* 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	8431	0	-38	1513	8325	0	-55	1575	8911
Haryana	6815	0	-65	1849	6117	0	72	1816	6914
Rajasthan	7208	0	139	165	6790	0	-115	190	7710
Delhi	4294	5	18	733	4004	0	35	482	4883
UP	11068	1600	171	915	11652	2180	122	818	11921
Uttarakhand	1834	0	103	-113	1435	0	92	-404	1834
HP	1105	0	-14	-1325	928	0	20	-1609	1259
J&K	1830	457	158	-507	1147	202	-106	-871	1830
Chandigarh	276	0	-16	0	218	0	-13	0	314
Total	42861	2062	456	3230	40616	2382	52	1998	43610

* 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	1664	1994	1504	39.08	1628	38.23	0.85	
	Rihand I STPS (2*500)	1000	896	893	733	17.08	711	17.94	-0.86	
	Rihand II STPS (2*500)	1000	943	998	809	20.14	839	19.92	0.22	
	Rihand III STPS (2*500)	1000	480	507	381	9.53	397	9.46	0.07	
	Dadri I STPS (4*210)	840	600	356	339	8.85	369	9.34	-0.49	
	Dadri II STPS (2*490)	980	970	807	681	16.90	704	17.79	-0.89	
	Unchahar I TPS (2*210)	420	400	411	351	7.01	292	7.67	-0.66	
	Unchahar II TPS (2*210)	420	400	299	290	5.91	246	6.81	-0.90	
	Unchahar III TPS (1*220)	210	200	124	133	3.00	125	3.41	-0.41	
	ISTPP (Jhajjar) (3*500)	1500	1436	638	634	14.19	591	14.47	-0.29	
	Dadri GPS (4*130.19+2*154.51)	830	600	157	158	3.80	158	3.96	-0.16	
	Anta GPS (3*88.71+1*153.2)	419	396	-1	-1	0.00	0	0.00	0.00	
	Auraiya GPS (4*111.19+2*109.30)	663	638	301	206	6.20	258	6.37	-0.17	
	Dadri Solar	5	1	0	0	0.02	1	0.03	-0.01	
	Unchahar Solar	10	3	0	0	0.02	1	0.06	-0.05	
	Singrauli Solar	15	3	0	0	0.01	0	0.07	-0.06	
	Sub Total (A)	12112	10472	8326	7064	172	7161	176	-4	
B. NPC	NAPS (2*220)	440	379	407	419	8.94	372	9.10	-0.16	
	RAPS- B (2*220)	440	387	434	436	9.32	388	9.29	0.03	
	RAPS- C (2*220)	440	375	411	412	8.85	369	9.00	-0.15	
	Sub Total (B)	1320	1141	1252	1267	27.10	1129	27.38	-0.28	
C. NHPC	Chamera I HPS (3*180)	540	535	538	543	13.00	542	12.84	0.16	
	Chamera II HPS (3*100)	300	300	303	303	7.23	301	7.20	0.04	
	Chamera III HPS (3*77)	231	155	154	155	3.73	156	3.71	0.03	
	Bairasuli HPS (3*60)	180	179	182	123	3.39	141	3.26	0.13	
	Salal-HPS (6*115)	690	648	672	666	15.96	665	15.55	0.40	
	Tanakpur-HPS (3*40)	94	91	93	94	2.24	93	2.19	0.05	
	Uri-I HPS (4*120)	480	453	465	455	11.11	463	10.87	0.23	
	Uri-II HPS (4*60)	240	230	236	235	5.52	230	5.52	0.00	
	Dhauliganga-HPS (4*70)	280	280	280	280	6.77	282	6.72	0.05	
	Dulhasti-HPS (3*130)	390	386	395	398	9.36	390	9.26	0.09	
	Sewa-II HPS (3*40)	120	118	129	0	1.50	62	1.46	0.04	
	Parbati 3 (4*130)	520	255	264	264	5.11	213	5.07	0.04	
	Sub Total (C)	4065	3629	3710	3517	85	3538	84	1	
D. SJVNL	NJPC (6*250)	1500	1591	1600	1623	38.35	1598	38.18	0.16	
	Rampur HEP (6*68.67)	412	421	428	429	10.25	427	10.10	0.15	
	Sub Total (D)	1912	2012	2028	2052	48.60	2025	48.28	0.31	
E. THDC	Tehri HPS (4*250)	1000	1050	1052	1053	24.83	1034	24.70	0.13	
	Koteshwar HPS (4*100)	400	358	401	311	8.60	358	8.60	0.00	
	Sub Total (E)	1400	1408	1453	1364	33.42	1393	33.30	0.12	
F. BBMB	Bhakra HPS (2*108+3*126+5*157)	1379	1450	1456	1463	34.83	1451	34.80	0.03	
	Dehar HPS (6*165)	990	578	825	560	14.08	587	13.86	0.22	
	Pong HPS (6*66)	396	380	384	384	9.10	379	9.12	-0.02	
	Sub Total (F)	2765	2408	2665	2407	58.00	2417	57.78	0.22	
	Sub Total (G)	1662	0	1897	1823	42.26	1761	42.46	-0.21	
G. IPP(s)/JV(s)	ALLAIN DUHANGAN HPS(IPP) (2*96)	192	0	223	164	3.84	160	3.94	-0.09	
	KARCHAM WANGTOO HPS(IPP) (4*250)	1000	0	1200	1200	27.98	1166	27.96	0.02	
	Malana Stg-II HPS (2*50)	100	0	111	111	2.24	93	2.38	-0.14	
	Shree Cement TPS (2*150)	300	0	286	274	6.40	267	6.39	0.01	
H. Total Regional Entities (A-G)										
		25237	21071	21330	19494	466.16	19423	468.57	-2.41	

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	690	740	16.02	668	
	Guru Nanak Dev TPS(Bhatinda) (2*110+2*120)	460	80	80	1.80	75	
	Guru Hargobind Singh TPS(L.mbt) (2*210+2*250)	920	434	389	8.93	372	
	Goindwal(GVK)		0	0	0.00	0	
	Rajpura (2*700)	1400	717	714	19.44	810	
	Talwandi Saboo (1*660)	660	333	329	7.45	311	
	Thermal (Total)	4700	2254	2252	53.64	2235	
	Total Hydro	1000	1067	1076	25.67	1070	
	Total Punjab	5700	3321	3328	79.31	3305	
	Haryana	Panipat TPS (4*110+2*210+2*250)	1367	0	0	0.00	0
DCRTPP (Yamuna nagar) (2*300)		600	473	471	10.57	441	
Faridabad GPS (NTPC)		432	309	321	7.72	322	
RGTPP (khedar) (IPP) (2*600)		1200	368	0	2.54	106	
Magnum Diesel (IPP)		25	0	0	0.00	0	
Jhajjar(CLP) (2*660)		1320	0	0	0.00	0	
Thermal (Total)		4944	1150	792	20.83	868	
Total Hydro		62	21	27	0.58	24	
Total Haryana		5006	1171	819	21.41	892	
Rajasthan		kota TPS (2*110+2*195+3*210)	1240	510	507	12.24	510
		suratgarh TPS (6*250)	1500	397	381	9.56	398
		Chabra TPS (4*250)	1000	0	249	5.30	221
		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	167	197	4.06	169
	RAPS A (NPC) (1*100+1*200)	300	162	164	3.98	166	
	Barsingsar (NLC) (2*125)	250	89	90	2.01	84	
	Giral LTPS (2*125)	250	9	0	0.05	2	
	Rajwest LTPS (IPP) (8*135)	1080	557	769	13.61	567	
	V/S LIGNITE LTPS (IPP) (1*135)	135	0	0	0.00	0	
	Kalisindh Thermal(2*600)	1200	0	0	0.00	0	
	Kawai(Adani) (2*660)	1320	912	653	20.85	869	
	Thermal (Total)	8876	2803	3010	72	2986	
	Total Hydro	550	284	274	7.09	296	
	Wind power	3214	954	761	22.88	953	
	Biomass	99	24	24	0.58	24	
	Solar	730	0	0	0.05	2	
	Renewable/Others (Total)	4043	978	785	23.51	980	
	Total Rajasthan	13469	4065	4069	102.26	4261	
	UP	Anpara TPS (3*210+2*500)	1630	1071	1121	25.20	1050
Obra TPS (2*50+2*94+5*200)		1194	281	380	7.70	321	
Panicha TPS (2*110+2*220+2*250)		1140	739	654	17.00	708	
Panki TPS (2*105)		210	50	59	1.20	50	
Harduaganj TPS (1*60+1*105+2*250)		665	500	473	11.50	479	
Tanda TPS (NTPC) (4*110)		440	270	180	5.37	224	
Roza TPS (IPP) (4*300)		1200	1071	1054	25.50	1063	
Anpara-C (IPP) (2*600)		1200	0	0	0.00	0	
Bajaj Energy Pvt.Ltd(IPP) TPS (10*45)		450	365	322	8.00	333	
Anpara-D(1*500)		500	0	0	0.00	0	
Lalitpur TPS(1*660)		660	30	277	4.70	196	
Thermal (Total)		9289	4377	4520	106	4424	
Vishnuparyag HPS (IPP)(4*110)		440	0	0	0.00	0	
Alakananda(4*82.5)		330	326	327	7.80	325	
Other Hydro		527	286	258	5.60	233	
Cogeneration		981	50	50	1.20	50	
Total UP	11567	5039	5155	121	5032		
Uttarakhand	Total Hydro	1398	980	930	23.09	962	
	Total Uttarakhand	1398	980	930	23.09	962	
Delhi	Rajghat TPS (2*67.5)	135	0	0	-0.02	-1	
	Delhi Gas Turbine (6x30 + 3x34)	282	33	33	0.77	32	
	Pragati Gas Turbine (2x104+ 1x122)	330	146	145	3.50	146	
	Riithala GPS (3*36)	95	0	0	0.00	0	
	Bawana GPS (4*216+2*253)	1370	-4	-4	-0.11	-4	
	Badarpur TPS (NTPC) (3*95+2*210)	705	316	321	6.81	284	
	Thermal (Total)	2917	491	495	10.96	457	
	Total Delhi	2917	491	495	10.96	457	
HP	Baspa HPS (IPP) (3*100)	300	330	330	7.76	323	
	Malana HPS (IPP) (2*43)	86	101	101	2.41	100	
	Other Hydro	878	601	601	14.34	598	
	Total HP	1264	1032	1032	24.51	1021	
J & K	Baglihar HPS (IPP) (3*150)	450	450	450	10.80	450	
	Other Hydro/IPP	560	179	184	4.24	177	
	Gas/Diesel/Others	190	0	0	0.00	0	
	Total J & K	1200	629	634	15.04	627	
Total State Control Area Generation		42521	16728	16462	397.36	16557	
J. Net Inter Regional Exchange [Import (+ve)/Export (-ve)]			7049	5990	149.74	6239	
Total Regional Availability(Gross)		67758	45108	41946	1013.26	42219	

IV. Total Hydro Generation:

Regional Entities Hydro	12234	12232	11660	279.13	11631
State Control Area Hydro	6581	4625	4558	109	4558
Total Regional Hydro	18815	16857	16218	388.52	16188

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	-50	0	250	0.00	3.22	-3.22
765 KV Gwalior-Agra (D/C)	2210	1357	2459	0	38.82	0.00	38.82
400 KV Zerda-Kankroli	-75	-179	0	296	0.00	4.58	-4.58
400 KV Zerda-Bhimmal	-81	-179	0	318	0.00	4.43	-4.43
220 KV Auraiya-Malanpur	-23	-68	0	88	0.00	1.24	-1.24
220 KV Badod-Kota/Morak	30	5	36	55	0.12	0.12	0.00
Mundra-Mohinderqarh(HVDC Bipole)	2502	2006	2523	0	52.09	0.00	52.09
400 KV Vindhychal - Rihand	495	460	501	0	11.04	0.00	11.04
765 kV Phagi-Gwalior (D/C)	781	800	431	0	15.87	0.00	15.87
Sub Total WR	5589	4152			117.93	13.59	104.34
Pusauli Bypass/HVDC	400	400	400	0	9.06	0.00	9.06
400 KV MZP- GKP (D/C)	232	442	610	0	11.06	0.00	11.06
400 KV Patna-Balia(D/C) X 2	195	295	360	0	6.13	0.00	6.13
400 KV B'Sharif-Balia (D/C)	64	176	258	0	4.06	0.00	4.06
765 KV Pusauli-Balia	88	71	158	37	1.99	0.00	1.99
765 KV Gaya-Fatehpur	161	148	308	0	4.44	0.00	4.44
220 KV Pusauli-Sahupuri	142	126	160	0	3.11	0.00	3.11
132 KV K'nasa-Sahupuri	0	0	0	0	0.00	0.00	0.00
132 KV Son Ngr-Rihand	-27	-26	0	38	0.00	0.63	-0.63
132 KV Garhwa-Rihand	0	0	0	0	0.00	0.00	0.00
765 KV Sasaram - Fatehpur	-19	11	183	77	1.36	0.00	1.36
400 KV Barh -GKP (D/C)	224	195	264	0	4.82	0.00	4.82
Sub Total ER	1460	1838			46.03	0.63	45.39
Total IR Exch	7049	5990			163.96	14.22	149.74

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
25.87	3.68	29.54	20.46	12.89	5.30	-1.27	0.00	0.00
Total IR Schedule (MU)								
Through ER	Through WR Incids Mndra	Total	Through ER	Through WR	Total	Through ER	Through WR	Total
55.30	95.40	150.69	45.39	104.34	149.74	-9.91	8.95	-0.96

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	-32	-33	0	34	0	1	-0.55

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	0.49	6.17	54.62	78.68	11.62	3.59	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	49.99	0.04	0.06	50.20	49.92
50.20	13.02	49.72	6.19					

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	407	03:26	401	16:07	0.0	0.0	0.0	0.0
Gorakhpur	400	421	13:24	403	22:11	0.0	0.0	0.3	0.0
Bareilly	400	416	17:05	399	14:39	0.0	0.0	0.0	0.0
Kanpur	400	419	17:06	406	14:20	0.0	0.0	0.0	0.0
Dadri	400	412	17:07	395	14:41	0.0	0.0	0.0	0.0
Ballabgarh	400	422	04:02	400	14:20	0.0	0.0	2.3	0.0
Bawana	400	417	04:02	397	14:20	0.0	0.0	0.0	0.0
Bassi	400	427	04:04	402	14:20	0.0	0.0	17.9	0.0
Hissar	400	412	03:59	392	14:17	0.0	0.0	0.0	0.0
Moga	400	410	23:54	394	14:19	0.0	0.0	0.0	0.0
Abdullapur	400	416	23:57	399	21:58	0.0	0.0	0.0	0.0
Nalagarh	400	419	23:53	399	12:56	0.0	0.0	0.0	0.0
Kishenpur	400	412	23:27	402	14:27	0.0	0.0	0.0	0.0
Wagoora	400	406	23:58	385	20:21	0.0	7.7	0.0	0.0
Amritsar	400	411	23:54	393	10:03	0.0	0.0	0.0	0.0
Kashipur	400	418	04:18	409	14:36	0.0	0.0	0.0	0.0
Hamirpur	400	402	00:00	402	00:00	0.0	0.0	0.0	0.0
Rishikesh	400	407	05:05	384	14:39	0.0	7.3	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	779	17:09	754	14:37	0.0	0.0	0.0	0.0
Balia	765	779	17:08	751	22:12	0.0	0.0	0.0	0.0
Moga	765	786	23:57	755	14:20	0.0	0.0	0.0	0.0
Agra	765	796	17:57	764	14:41	0.0	0.0	0.0	0.0
Bhiwani	765	794	03:40	761	14:18	0.0	0.0	0.0	0.0
Unnao	765	764	08:01	741	15:47	0.0	0.1	0.0	0.0
Lucknow	765	779	17:08	753	22:10	0.0	0.0	0.0	0.0
Meerut	765	801	03:59	763	14:20	0.0	0.0	0.7	0.0
Jhatikara	765	796	03:41	761	14:17	0.0	0.0	0.0	0.0
Bareilly	765	778	17:07	750	14:39	0.0	0.0	0.0	0.0
Anta	765	767	00:00	767	00:00	0.0	0.0	0.0	0.0
Phagi	765	798	04:03	761	22:30	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	509.21	1515.08	509.59	1530.03	1362.63	1158.75
Pong	426.72	384.05	421.80	975.89	415.48	693.24	790.24	520.66
Tehri	829.79	740.04	814.35	889.26	811.85	839.28	882.83	573.00
Koteshwar	612.50	598.50	610.05	4.44	611.28	5.20	573.00	566.57
Chamera-I	760.00	748.75	756.84	0.00	0.00	0.00	392.66	352.20
Rihand	268.22	252.98	851.00	271.50	856.00	355.50	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	523.39	14.27	518.67	10.39	406.75	558.50

* 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	1515	60	0	1513	0	0	36.36	0.57	36.93
Delhi	418	64	0	691	42	0	13.89	5.04	18.93
Haryana	1576	240	0	1628	221	0	38.04	4.49	42.53
HP	-1119	-490	0	-918	-407	0	-23.08	-11.55	-34.63
J&K	-795	-76	0	-542	35	0	-14.76	-0.68	-15.44
CHD	0	0	0	0	0	0	0.24	-0.05	0.18
Rajasthan	-498	688	0	-498	663	0	-11.95	15.95	4.01
UP	818	0	0	426	489	0	13.05	2.84	15.89
Uttarakhand	-188	-216	0	-147	34	0	-3.68	-1.88	-5.56
Total	1727	271	0	2152	1077	0	48.10	14.73	62.83

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

State	Bilateral (MW)		IEX (MW)		PXIL (MW)	
	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Punjab	1515	1513	88	0	0	0
Delhi	1123	184	463	-67	0	0
Haryana	1628	1576	258	40	0	0
HP	-851	-1172	-405	-606	0	0
J&K	-542	-795	35	-152	0	0
CHD	29	0	0	-30	0	0
Rajasthan	-498	-498	780	620	0	0
UP	818	380	489	0	0	0
Uttarakhand	-136	-188	56	-242	0	0

XI. System Constraints:

XII. Grid Disturbance / Any Other Significant Event:

XIII. Weather Conditions For 18.08.2015 :
cloudy weather and scattered rain in parts of NR

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 :