

State Load Despatch Center, Airoli (MSETCL) Statement I
Daily system Report for 09/Nov/2020 MONDAY

I GENERATION (MUs)			II EXCHANGES (MUs)		
A) MSPGCL	Daily	Monthly	E) InterState Exchanges	Daily	Monthly
1) Thermal	117.121	1176.772	1) Gujrat	0.754	13.321
2) Hydro	10.882	48.671	2) Madhya Pradesh	7.285	58.635
3) Gas	6.647	59.749	3) Chattisgarh	7.850	58.980
Total MSPGCL	134.650	1285.192	4) Maharashtra	131.468	1123.572
B) 1) APLM	69.264	581.381	5) Goa (Amona)	-1.237	-10.343
2) JSWEL	17.540	156.757	Total	146.120	1244.165
3) VIPL	0.000	0.000	a) Mumbai Schedule	19.730	204.966
4) RPL(AMT)	0.000	0.000	b) Mumbai Drawl	22.312	212.513
5) WPCL	7.862	65.897	c) MSEDCL Bilateral *	27.454	253.796
6) Other IPP	15.720	115.746	Include PX	0.423	2.683
7) PGPL	0.000	0.000	d) Mumbai Bilateral *	19.730	204.966
C) 1) TPCL Thermal	14.339	136.276	Include PX	10.893	127.601
2) TPCL Hydro	3.095	28.822	Standby	0.000	0.000
3) TPCL Gas	4.374	39.283	H) ENERGY CATERED (MUs)		
4) AEML Thermal	9.720	59.080	1) MSEDCL	385.231	3399.248
D) STATE			2) Mumbai Discoms	53.840	475.973
1) Thermal	251.566	2291.909	TOTAL STATE	439.071	3875.221
(A1+C1+C4+(B1-B6))					
2) Hydro	13.977	77.493			
(A2+C2)					
3) Gas	11.021	99.032			
(A3+B7+C3)					
4) Wind	9.322	102.088			
6) SOLAR	7.065	60.535			
TOTAL STATE	292.951	2631.057			

* Displayed for information, not added in total.

DETAILS OF MAHARASHTRA STATE PEAK DEMAND(MW) Statement II

PARTICULARS	A. Morning Peak at 12 Hrs	B. Day Peak at 13 Hrs	C. Evening Peak at 19 Hrs	D. Night Minimum at 4 Hrs
MSPGCL Thermal	4960	5075	5150	4005
MSPGCL Hydro	915	580	855	69
MSPGCL Gas	267	255	269	292
MSPGCL Total Generation	6142	5910	6274	4366
Central Sector Receipt	7169	7145	5858	5407
WIND	82	98	246	626
CPP / IPP Thermal	4994	5024	5068	3918
CPP / IPP Gas	0	0	0	0
SOLAR	1020	1010	0	0
Exchange with Mumbai	-1113	-1110	-867	-837
MSEDCL DEMAND MET	18294	18077	16579	13480
Load Shedding	0	0	0	0
MSEDCL DEMAND	18294	18077	16579	13480
TPCL GENERATION	1044	1041	1205	594
AEML GENERATION	499	500	499	283
MUMBAI DEMAND	2656	2651	2571	1714
STATE DEMAND MET	20950	20728	19150	15194
STATE DEMAND	20950	20728	19150	15194
Frequency (Hz)	50.00	49.96	50.04	50.00

FREQUENCY PARTICULARS

MAXIMUM FREQ.	MINIMUM FREQ.	AVERAGE FREQ.	FREQ. BELOW 49.2 Hz
50.19 Hz at 06.02 Hrs	49.83 Hz at 06.25 Hrs	50	0 % of Time(min)

Note : The report is based on Operational Data and is for statistical purpose only.

Shift Engineer

Shift Incharge

Daily and Progressive Generation,Maximum,Minimum for 09/Nov/2020

Generating unit	Generation			
	Daily (Mus)	Monthly (Mus)	Max (MW)	Min (MW)
Koradi				
Unit 6	0.00	0.00	0	0
Unit 7	0.00	0.00	0	0
Unit 8	11.86	100.76	584	290
Unit 9	8.32	64.01	540	245
Unit 10	0.54	71.95	370	0
Total	20.72	236.72		
Bhusawal				
Unit 3	0.00	0.00	0	0
Unit 4	9.62	84.42	500	280
Unit 5	9.55	64.51	480	280
Total	19.16	148.92		
Parli				
Unit 4	0.00	0.00	0	0
Unit 5	0.00	0.00	0	0
Unit 6	0.00	8.84	0	0
Unit 7	0.00	0.00	0	0
Unit 8	5.52	38.94	250	190
Total	5.52	47.78		
Chandrapur				
Unit 3	3.86	34.42	174	124
Unit 4	3.61	32.48	162	118
Unit 5	8.86	81.33	420	275
Unit 6	9.21	83.26	420	279
Unit 7	0.00	0.00	0	0
Unit 8	2.11	63.18	440	0
Unit 9	11.12	100.69	491	280
Total	38.78	395.36		
Paras				
Unit 3	5.76	50.14	256	206
Unit 4	5.64	48.94	253	155
Total	11.40	99.08		
Khaparkheda				
Unit 1	3.66	32.60	165	140
Unit 2	3.82	35.28	175	140
Unit 3	4.07	35.78	185	140
Unit 4	4.05	36.31	185	140
Unit 5	0.00	76.16	0	0
Total	15.60	216.12		
Nasik				
Unit 3	2.26	2.26	166	0
Unit 4	3.68	30.52	195	127
Unit 5	0.00	0.00	0	0
Total	5.94	32.78		
Uran				
All Units	6.65	59.75	293	255
Total	6.65	59.75		
PGPL				
Unit 1	0.00	0.00	0	0
Unit 2	0.00	0.00	0	0
Total	0.00	0.00		
PENCH (MS)				
Pench (MS)	0.20	1.49	40	0

Generating unit	Generation			
	Daily (Mus)	Monthly (Mus)	Max (MW)	Min (MW)
Total	0.20	1.49		
Koyna				
Stage 1-2	4.30	24.18	545	40
Stage 4	2.96	4.84	503	0
Stage 3	1.86	7.20	160	0
Total	9.13	36.21		
Hydro				
KDPH	0.00	0.00	0	0
VTRNA	0.00	0.00	0	0
TILLARI	0.00	0.11	0	0
BHTGR/VEER	0.00	0.00	0	0
BHIRA T.R.	0.16	1.79	40	0
RNGR+BHTSA	0.35	3.18	15	14
BHANDARDRA	0.00	0.00	0	0
ELDARY	0.00	0.93	0	0
SMLHY_PTN	0.25	0.25	11	10
GHATGHAR	0.99	6.20	250	0
Total	1.75	12.46		
Wind				
Total	9.32	102.09	0	0
Total	9.32	102.09		
CPP				
APML(Mus)	69.26	581.38	0	0
JSWEL(Mus)	17.54	156.76	0	0
VIPL(Mus)	0.00	0.00	0	0
RPLAMT(Mus)	0.00	0.00	0	0
WPCL(Mus)	7.86	65.90	0	0
Other(Mus)	15.72	115.75	0	0
Total	110.39	919.78		
SOLAR				
Total	7.06	60.54	0	0
Total	7.06	60.54		
Tata				
Trombay 5	9.53	89.16	462	275
Trombay 6	0.00	0.00	0	0
Trombay 7A	2.79	25.06	118	114
Trombay 7B	1.58	14.23	67	64
Trombay 8	4.81	47.11	233	136
TATA Hydro	3.10	28.82	392	0
Total	21.81	204.38		
AEML				
DTPS U-1&2	9.72	59.08	500	282
Total	9.72	59.08		

* Infirm Power			Summary			Summary		
Particulars	Daily (Mus)	Monthly	Particulars	Daily (Mus)	Monthly (Mus)	Particulars	Daily (Mus)	Monthly (Mus)
			MSPGCL Thermal	117.12	1176.77	MSPGCL Total	134.65	1285.19
			MSPGCL Thml+Gas	123.77	1236.52	Koyna 1,2 & 4 Total	7.27	29.01
			MSPGCL Hydro	10.88	48.67	State Total	292.95	2631.06

State Load Despatch Center,Airoli (MSETCL)

Annexure-2

Hourly Load Data As on 09/Nov/2020

TIME SR. NO.	MSPGCL GEN.			TOTAL	WIND	CPP / IPP		SOLAR	CS SHARE	CS RECPT	Mum. NET EXCH.	MSEDCL DEM. MET	LOAD SHEDDI NG	MSEDCL DEM. WITH LS	MUMBAI DEMAND	STATE DEMAND	FREQ. (Hz)
	THM	HY	GAS			THM	GAS										
1	4129	64	282	4475	833	3852	0	0	5599	5551	-1101	13610	0	13610	2021	15631	50.00
2	3911	69	282	4262	815	3877	0	0	5568	5585	-1001	13538	0	13538	1887	15425	50.00
3	3764	79	282	4125	721	3876	0	0	5483	5761	-906	13577	0	13577	1782	15359	49.99
4	4005	69	292	4366	626	3918	0	0	5418	5407	-837	13480	0	13480	1714	15194	50.00
5	4582	64	282	4928	563	4002	0	0	5414	5601	-807	14287	0	14287	1686	15973	50.01
6	5179	96	283	5558	566	4204	0	0	5542	5566	-820	15074	0	15074	1719	16793	49.99
7	5329	284	293	5906	528	4797	0	11	5792	5756	-498	16500	0	16500	1793	18293	49.97
8	5332	898	293	6523	378	4963	0	195	5836	6160	-531	17688	0	17688	1896	19584	49.98
9	5271	893	272	6436	282	5067	0	520	6103	6270	-764	17811	0	17811	2126	19937	50.01
10	5071	755	290	6116	222	5078	0	786	6656	6739	-981	17960	0	17960	2401	20361	49.98
11	4981	585	268	5834	157	4992	0	935	7064	7285	-1092	18111	0	18111	2583	20694	49.96
12	4960	915	267	6142	82	4994	0	1020	7188	7169	-1113	18294	0	18294	2656	20950	50.00
13	5075	580	255	5910	98	5024	0	1010	7322	7145	-1110	18077	0	18077	2651	20728	49.96
14	5102	382	267	5751	89	5013	0	943	7089	7195	-1031	17960	0	17960	2571	20531	50.04
15	5019	289	265	5573	116	4996	0	811	7248	6860	-1040	17316	0	17316	2580	19896	50.02
16	4985	1104	266	6355	107	4952	0	557	6635	6760	-1035	17696	0	17696	2599	20295	50.00
17	4970	1121	257	6348	122	5011	0	244	6371	6306	-826	17205	0	17205	2581	19786	49.99
18	5065	1044	277	6386	225	5079	0	33	5896	5921	-794	16850	0	16850	2527	19377	50.01
19	5150	855	269	6274	246	5068	0	0	5935	5858	-867	16579	0	16579	2571	19150	50.04
20	5255	389	280	5924	306	4932	0	0	5975	5920	-910	16172	0	16172	2503	18675	50.01
21	5377	119	270	5766	265	4655	0	0	5732	5409	-1020	15075	0	15075	2376	17451	50.02
22	5255	86	291	5632	442	4206	0	0	5567	5139	-988	14431	0	14431	2379	16810	50.03
23	4762	76	282	5120	745	3968	0	0	5579	5373	-1077	14129	0	14129	2161	16290	50.04
24	4592	66	282	4940	788	3862	0	0	5368	5384	-1163	13811	0	13811	2077	15888	50.01
MUs	117.12	10.88	6.65	134.65	9.32	110.39	0.00	7.07	146.38	146.12	-22.31	385.23	0.00	385.23	53.84	439.07	50.00

NOTE : ALL VALUES IN MW

Mumbai Net Exch is shown with reference to MSETCL system and (-) sign indicates MSETCL periphery to Mumbai system.

State Load Despatch Center,Airoli (MSETCL) Statement-VI
Details of Generating Unit Outages/Trippings for 09/Nov/2020

Position as on 6.30 Hrs of 10/Nov/2020

Generating Company	Name of Generating Unit	Capacity	Tripped Date	Tripped Time	Sync.Date	Sync. Time	Reason of Outage	Expected Date
FORCED OUTAGE								
IPP	SWPGL U-1	135	16/02/2016	17.09		Continued.	No PPA.	
PGPL	PGPL U2	126	07/02/2017	17.30		Continued.	No Schedule	
PGPL	PGPL U1	262	07/02/2017	17.30		Continued.	No Schedule	
IPP	IEPL Unit 1	270	28/08/2018	21.26		Continued.	No PPA	
IPP	VIPL U-1	300	29/12/2018	00.30		Continued.	Coal Shortage	
IPP	VIPL U-2	300	17/01/2019	00.15		Continued.	Coal Shortage	
MSPGCL	Koradi Unit 7	210	27/08/2019	09.52		Continued.	Coal Flow Problem Due To Wet Coal.(Converted To Zero Schedule From 12.09.2019 At 10.00 hrs)	
MSPGCL	Bhusawal Unit 3	210	01/09/2019	17.56		Continued.	Zero Schedule from 18:00hrs of 28/09/2019	
MSPGCL	Koradi Unit 6	210	06/09/2019	15.41		Continued.	Zero Schedule By MSEDCL	
IPP	RPL(AMT) U-4	270	12/11/2019	00.00		Continued.	Zero Schedule By MSEDCL.	
MSPGCL	Nasik Unit 5	210	12/12/2019	10.25		Continued.	PA Fan Problem (Under Case 4 Bidding From 11.00Hrs DT. 13-12-2019)	
IPP	RPL(AMT) U-3	270	11/02/2020	18.00		Continued.	Zero Schedule By MSEDCL.	
IPP	RPL(AMT) U-5	270	11/02/2020	19.30		Continued.	Zero Schedule By MSEDCL.	
MSPGCL	Nasik Unit 3	210	17/02/2020	00:00	09/11/2020	03.33	C W PUMP High Vibrations(convert to Zero Schedule from 00.00Hrs DT. 18-02-2020)	
MSPGCL	Uran Unit 8	108	01/03/2020	20.57		Continued.	Gas shortage	
IPP	RPL(AMT) U-1	270	04/03/2020	19.30		Continued.	Zero Schedule By MSEDCL	
IPP	RPL(AMT) U-2	270	09/03/2020	20.15		Continued.	Zero Schedule By MSEDCL	
MSPGCL	Uran Unit 7	108	25/05/2020	12.51		Continued.	Turbine Blade Failure	
MSPGCL	Uran Unit B0	120	25/05/2020	12.51		Continued.	Turbine Blade Failure	
MSPGCL	Chandrapur Unit 7	500	29/09/2020	01.58		Continued.	Tripped On Generator Protection.	
MSPGCL	Parli Unit 7	250	22/10/2020	20.00		Continued.	Zero Schedule By MSEDCL	
IPP	JSW (J) U2	300	01/11/2020	04.44		Continued.	No Schedule	
MSPGCL	Parli Unit 6	250	02/11/2020	23.28		Continued.	Excess DM water consumption.	
MSPGCL	Chandrapur Unit-8	500	06/11/2020	10.56	09/11/2020	15.57	Boiler validity expired.	
MSPGCL	Khaparkhedda Unit 5	500	08/11/2020	14.01		Continued.	Boiler Tube Leakage	
MSPGCL	Koradi Unit 10	660	09/11/2020	01.28		Continued.	Air heater problem	

State Load Despatch Center,Airoli (MSETCL)
Details of Line outages/Trippings for 09/Nov/2020

Statement-VII

Position as on 6.30 Hrs of 10/Nov/2020

Name of Line	Inter State / Intra State	Tripped Date	Tripped Time	Sync. Date	Sync. Time	Outage Type	Reason of Outage
500 KV LINE Outages/Trippings							
Chandrapur - Padghe Hvdc Pole 2	IntraState	19/10/2020	23.01		Continued.	PO	Abnormal sound from main tank of smoothing reactor at Chandrapur end
400 KV LINE Outages/Trippings							
Karad Solapur (PG)	InterState	03/05/2017	11:49		Continued.	PO	Line Converted As 220 Kv Solapur (PG)- Jeur From LOC 403
Dhule Sar'Sarovar II	InterState	07/11/2020	19.43		Continued.	HT	Over Voltage
Kolhapur Solapur(PG) I	InterState	09/11/2020	14.40	09/11/2020	17.08	T	Problem In Line Reactor at PG End.
Karad - Jaigad - II	IntraState	16/09/2020	23.34		Continued.	HT	Over Voltage (Tower Collapsed Loc No.150 at 18.59Hrs DT.27/09/2020).
Jaigad-Karad Ckt-I	IntraState	27/09/2020	18.59		Continued.	T	Distance Protection(Tower Collapsed Loc No.150 at 18.59Hrs DT.27/09/2020).
Akola II - RPL(Rattanindia) Ckt I	IntraState	06/11/2020	22.04		Continued.	HT	Over Voltage
Khadka-Aurangabad (Waluj)	IntraState	08/11/2020	19.21	09/11/2020	07.11	HT	Over Voltage
Dhule - Bableshwar - II	IntraState	08/11/2020	19.56	09/11/2020	11.05	HT	Over Voltage
Lonikand I - Koyna stage-IV	IntraState	09/11/2020	00.58	09/11/2020	09.17	HT	Over Voltage
Karad - Talandge Ckt 1	IntraState	09/11/2020	09.21	09/11/2020	19.20	PO	CT Ratio Modification Work At Both Ends.
Koradi-Bhusawal	IntraState	09/11/2020	09.23		Continued.	PO	Restrining Of Conductor between Tower No 06-16.
125 MVAR Bus Reactor @ Warora	IntraState	09/11/2020	09.49	09/11/2020	16.00	PO	Routine Maintenance & Dcrm/ crm/cb Timings testing Works and Isolater Maintenance Work.
Taptitanda Waluj	IntraState	09/11/2020	10.29	09/11/2020	17.57	PO	Replacement of disc insulator string at loc no.375, R Ph &jumper tightening work (General cut point maintenance work)
Deepnagar Waluj 1	IntraState	09/11/2020	16.51	09/11/2020	22.56	T	Distance Protection
Dhule - Bableshwar - II	IntraState	09/11/2020	19.15		Continued.	HT	Over Voltage
Lonikand I - Koyna stage-IV	IntraState	09/11/2020	23.32		Continued.	HT	Over Voltage
400 KV ICT Outages/Trippings							
400/220/33 Kv 315 Mva ICT 1 @Padghe	IntraState	15/11/2018	10.07		Continued.	T	Differential Protection,Declared Faulty.
400/220kv 315 MVA ICT I @ KOLHAPUR-III (TALANDGE)	IntraState	10/09/2020	09.58		Continued.	PO	Replacement of Existing 315 MVA ICT by 3*167 MVA ICT.
400/220/33 Kv 315 Mva Ict 2 @Dhule	IntraState	23/09/2020	09.12		Continued.	PO	Augmentation work of 400/220 315MVA ICT-II to 501MVA
400/220/33kv 315MVA ICT2 @Lonikand	IntraState	01/11/2020	03.34		Continued.	T	Differential protection
400/220 Kv 315 MVA ICT -I @New Koyna	IntraState	09/11/2020	10.17	09/11/2020	17.59	PO	Diagnostic testing & Relay testing work & Routine maint. Work.
220 KV LINE Outages/Trippings							
Mudshingi Chikodi	InterState	24/09/2019	17.12		Continued.	PO	No Schedule(Charge from Mudshingi end only)
Talandage - Chikodi	InterState	01/10/2019	17.10		Continued.	PO	No Schedule(Close at Chikodi end only)
Tillari Amona	InterState	02/11/2020	14.30		Continued.	PO	220 kv Amona Bay old CB Replacement (civil,Erection & Commissioning,testing)Work at 220 kv Tillari Switch yard.
EKLAHARE (OCR) Nasik - Navsari I	InterState	07/11/2020	13.59		Continued.	HT	Outage at navsari end.
Kharghar-Borivali ckt II	IntraState	11/08/2020	01.45		Continued.	T	Special Repair Cable work.
Theur-Phursungi	IntraState	14/08/2020	09.46		Continued.	HT	Outage Arrangement HTLS Work.

HT : Hand Tripping, MT : Multiple Tripping, T : Tripping, PO : Planned Outage, EO : Emergency Outage, OO : Opportunity Outage

State Load Despatch Center,Airoli (MSETCL)
Details of Line outages/Trippings for 09/Nov/2020

Statement-VII

Position as on 6.30 Hrs of 10/Nov/2020

Name of Line	Inter State / Intra State	Tripped Date	Tripped Time	Sync. Date	Sync. Time	Outage Type	Reason of Outage
Theur- Magar Patta City	IntraState	14/08/2020	10.27		Continued.	HT	Outage Arrangement HTLS Work.
Parli 3 (Old Gcr)-Girwali Ckt-3	IntraState	20/08/2020	13.05		Continued.	PO	Erection of Tower Due to Railway Crossing
Parli 3(Old Gcr)- Girwali Ckt 4	IntraState	20/08/2020	13.06		Continued.	PO	Erection of Tower Due to Railway Crossing
Lonikand1 (400 Kv)-Theur II	IntraState	06/10/2020	08.54		Continued.	PO	HTLS Stringing work
Badnera-Akola li	IntraState	09/11/2020	09.12	09/11/2020	16.01	PO	For routine diagnostic Testing & maintenance Works.
BOISAR BORIVALI	IntraState	09/11/2020	09.27	09/11/2020	13.48	PO	Annual Diagnostic Testing Work.
Parli New Tps - Beed Ckt 1	IntraState	09/11/2020	09.58	09/11/2020	14.48	PO	Tan Delta Of CT.
REL Borivali Aarey Line	IntraState	09/11/2020	10.01	09/11/2020	11.53	PO	Tree trimming in spa vab 81-82.
Parli 3 (Old Gcr)-Girwali Ckt 2	IntraState	09/11/2020	10.06	09/11/2020	18.15	PO	Tan Delta Of CT.
ALKUD - MENDHEGIRI CKT - 2	IntraState	09/11/2020	10.42	09/11/2020	13.18	PO	Quarterly Maintainance Work
Talandge-Mudshingi Ckt-I	IntraState	09/11/2020	11.00	09/11/2020	16.18	PO	line Signature Analysis Of line By Tourus kit.
Aurangabad - Chitegaon	IntraState	09/11/2020	11.17	09/11/2020	18.10	PO	Routine Maintenance Work & Diagnostic Testing work.
Gadchandur-Ultratech II	IntraState	09/11/2020	11.40	09/11/2020	15.25	PO	For diagnostic Testing work i.e CB CRM timing and CT PT tab delta.
Babhaleshwar - Degaon Rangari	IntraState	09/11/2020	11.43	09/11/2020	15.49	PO	For replacement Of Y and B phase String at loc No.98.
Bhandara-Ultratech	IntraState	09/11/2020	11.56	09/11/2020	18.12	PO	Diagnostic Testing work & Relay testing Work.
Baramati- Kalyani	IntraState	09/11/2020	12.02	09/11/2020	13.58	PO	Annual diagnostic testing work.
Parli New Tps - Beed Ckt 2	IntraState	09/11/2020	14.50	09/11/2020	18.36	PO	Tan Delta Of CT.
Shivajinagar-Gangapur	IntraState	09/11/2020	15.25	09/11/2020	18.30	PO	Replacement of Jumpers with jump Cone at loc. No. 96, 97, 238,243,247 & 259.
220 KV ICT Outages/Trippings							
220/132-110/11kv 200mva Aditya Vid Ptr 3 @Miraj	IntraState	07/11/2020	09.50		Continued.	PO	OLTC overhauling work.
220/132-110/11kv 200MVA ICT 1 @Miraj	IntraState	07/11/2020	10.20	09/11/2020	17.20	PO	OLTC Overhauling Work.
220/100 Kv 200 MVA ICT-II @Trombay	IntraState	09/11/2020	08.13	09/11/2020	20.30	PO	1). Diagnostic test of ICT 2) HV CT Tan Delta 3) HV CB CRM , Timing, IR value & other R&M work.
220/100 Kv 200 Mva ICT III @Kalwa	IntraState	09/11/2020	09.12	09/11/2020	18.12	PO	200 MVA ICT 1, 200 MVA ICT 2, and 200 MVA ICT 4 will be in service.
220/132 kv 200MVA ICT II @ Akola	IntraState	09/11/2020	09.29	09/11/2020	17.19	PO	1. Diagnostic Testing work. 2.Hv & Iv tan delta Of ct 3. Bushing Tan delta & c 4.Excitation Current test 5.Breaker CRM & Timing 6.Routine Bay maintenance Work.
220/33kv 100 MVA Transformer 4 @Versova R/S	IntraState	09/11/2020	09.47	09/11/2020	12.03	PO	Inspection of transformer LV box for modification work.
Carnac : 220 / 110 / 33 315 MVA ICT 5	IntraState	09/11/2020	23.15	10/11/2020	00.49	EO	For removal of Damage Radiator.

HT : Hand Tripping, MT : Multiple Tripping, T : Tripping, PO : Planned Outage, EO : Emergency Outage, OO : Opportunity Outage