

TMI DOCUMENTS

DOCUMENT NO: TM-0213

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METROPOLITAN EDISON COMPANY.

WRM
Wilda R. Mullinix, NRC

7906130479

184 260

S

THREE MILE ISLAND

REACTOR TRIP REPORT # 2L

1. Time 0601

Date 4/17/78

2. Cause of trip.

LOSS OF F.W. WHICH CAUSED THE REACTOR TO TRIP ON HIGH PRESSURE

3. Plant conditions prior to trip

Power Level 15%

Reactor Coolant System Pressure 2155 psig

Temp 582 °F

Reactor Coolant System Flow 602 %

Pressure Tank Level 44.80 inches

Pressurizer Level 220 inches H₂O

Rad Level 1437 ppm.

SW 0

Control Rod Positions (withdrawn)

Group 1 100 %

Group 3 100 %

Group 5 100 %

Group 7 85 %

Group 2 100 %

Group 4 100 %

Group 6 85 %

Group 8 27 %

UCS Stations in Hand

Rx Demand, DIAMOND, BOTH F.W. PUMPS, ATC, ULD, SGIR Master

4. Evolutions in progress prior to trip.

a) STEADY STATE 15% F.P. PREPARING TO ROLL MAIN TURBINE

b) BLOWING DOWN SUCTION STRAINERS TO COND. & BOOSTER PUMPS

5. Corrective actions to prevent recurrence.

INSTRUCT OPERATORS NOT TO BLOW DOWN SUCTION STRAINERS ON RUNNING PUMP

6. Time and date next criticality achieved.

1355 4/19/78

H. A. Hitz
Shift Supervisor

James R. Floyd
Supervisor of Operations

GROUP 4

06:02:16

04/19/78

SEQUENCE OF EVENTS REVIEW

06:01:21:166	3092	CNDS BSTR PMP CO-P-2A	TRIP
06:01:33:493	3176	RP GREEN CH RC HI PRESS TRIP	HIGH
06:01:34:278	3175	RP RED CH RC HI PRESS TRIP	HIGH
06:02:19:333	3124	FW TURB A MANUAL TRIP	TRIP

GROUP 4

06:05:19

04/19/78

SEQUENCE OF EVENTS REVIEW

06:04:17:000	3109	TD MAIN FW PMP FW-P-1B	TRIP
06:04:30:160	3109	TD MAIN FW PMP FW-P-1B	TRIP
06:04:33:144	3182	RP BLUE CH RC LOW PRESS TRIP	LOW
06:04:34:505	3181	RP YELLOW CH RC LOW PRESS TRIP	LOW
06:04:58:844	3179	RP RED CH RC LOW PRESS TRIP	LOW
06:05:01:742	3180	RP GREEN CH RC LOW PRESS TRIP	LOW

GROUP 4

06:09:48

04/19/78

SEQUENCE OF EVENTS REVIEW

06:09:37:333	3108	TD MAIN FW PMP FW-P-1A	TRIP
06:17:40	DATA 0771	MU RCP 1A SEAL RET FLOW (GPM)	1.00
06:17:51	DATA 0772	MU RCP 2A SEAL RET FLOW (GPM)	.31
06:18:00	DATA 0773	MU RCP 2B SEAL RET FLOW (GPM)	.93
06:18:11	DATA 0774	MU RCP 1B SEAL RET FLOW (GPM)	1.00
06:27:14	DATA 0769	DH BOR WTR TANK LVL-1 (FTH20)	54.6

04/19/78

CONT	3258	EMER-FW-MMP-EF-P-2A	ON
CONT	3253	EMER-FW-MMP-EF-P-2B	ON
BAD	0921	TOT FDI THRU AAB HTR (KLB/H)	???
LOW	0003	SP STM GEN B S-U RANGE LVL (IN)	23.5
LOW	0002	SP STM GEN A S-U RANGE LVL (IN)	23.7
LOW	0095	SGFP SUCT HDR PRESS	156.6
NORM	0098	CNDS PUMPS OUTLET HDR PRESS	148.5
LOW	0099	CNDS BSTR PUMPS DISCH PRESS	155.
NORM	0117	EMER-FD-MMP1 DISCH PRESS	1416.
NORM	0118	EMER-FD-MMP 2A DISCH PRESS	1435.
NORM	0119	EMER-FD-MMP 2B DISCH PRESS	1402.
NORM	0096	COND H/L LVL (IN H2O)	25.59
HIGH	0398	RC LOOP A WIDE RANGE PRESS	2278.
HIGH	0399	RC LOOP A WIDE RANGE PRESS	2266.
HIGH	0402	RC PRESS REL VLV RV2 OUT TEMP	212.9
CONT	2759	14STG FDI HTR A LVL LOW	NORM
CONT	2771	14STG FDI HTR A LVL HIGH	HIGH
CONT	2771	14STG FDI HTR A LVL HIGH	NORM
FLAG	3575	SP10A-PT3 INSTR CONDITION	GOOD
HIGH	0096	COND H/L LVL (IN H2O)	36.11
HIGH	1682	PLVL RC PRESSURIZER LVL (INH2O)	269.6
CONT	3092	CNDS BSTR PMP CO-P-2A	TRIP
NORM	0021	TOT FDI THRU AAB HTR (KLB/H)	0
NORM	0095	SGFP SUCT HDR PRESS	308.8
NORM	0099	CNDS BSTR PUMPS DISCH PRESS	401.
CONT	3092	CNDS BSTR PMP CO-P-2A	NORM
BAD	0921	TOT FDI THRU AAB HTR (KLB/H)	???
CONT	2888	RP CH B RC III PRESS	TRIP
CONT	2912	RP REACTOR PROTECTION CH B	TRIP
CONT	2887	RP CH A RC III PRESS	TRIP
CONT	2911	RP REACTOR PROTECTION CH A	TRIP
CONT	3010	CRD REACTOR TRIP CONFIRM	TRIP
CONT	3013	CRD SAFETY ROBS NOT WITHDRAWN	YES
CONT	3016	CRD PROG LAMP FAULT	YES
CONT	2879	RP SUR BYPASS (CH N15)	NORM
CONT	2880	RP SUR BYPASS (CH N16)	NORM
CONT	2881	RP SUR BYPASS (CH N17)	NORM
CONT	2882	RP SUR BYPASS (CH N18)	NORM
CONT	3250	CNDS PUMP CO-P-1B	ON
LOW	0095	SGFP SUCT HDR PRESS	130.0
LOW	0099	CNDS BSTR PUMPS DISCH PRESS	118.
HIGH	0400	RC LOOP B WIDE RANGE PRESS	2286.
BAD	0575	RP INTER RANGE CH N13 SUR (DPM)	???
BAD	0576	RP INTER RANGE CH N14 SUR (DPM)	???
NORM	0021	TOT FDI THRU AAB HTR (KLB/H)	0
NORM	0095	SGFP SUCT HDR PRESS	592.6
NORM	0099	CNDS BSTR PUMPS DISCH PRESS	576.
BAD	1291	FLUX 10-0 LEVEL 4 (NANO/MPG)	???
CONT	2678	PRESS HTR GROUP 5	NORM
CONT	2676	PRESS HTR GROUP 3	NORM
NORM	0398	RC LOOP A WIDE RANGE PRESS	2101.
NORM	0399	RC LOOP A WIDE RANGE PRESS	2088.
NORM	0400	RC LOOP B WIDE RANGE PRESS	2059.
NORM	0575	RP INTER RANGE CH N13 SUR (DPM)	.72
NORM	0576	RP INTER RANGE CH N14 SUR (DPM)	.72
CONT	3124	FW TURB A MANUAL TRIP	TRIP
CONT	3124	FW TURB A MANUAL TRIP	NORM
HIGH	0404	RC PRESS REL VLV RV1B OUT TEMP	200.6
NORM	1682	PLVL RC PRESSURIZER LVL (INH2O)	254.2
NORM	1313	FLUX 8-B LEVEL 2 (NANO/MPG)	15.
BAD	0030	10STGA-11STGA HTR DRN FL (KLB/H)	???

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06:04:15	CONT	3250	CHDS PUMP CO-P-18	OFF
06:04:17	CONT	3109	TD MAIN FI PMP FI-P-18	TRIP
06:04:21	CONT	3109	TD MAIN FI PMP FI-P-18	TRIP
06:04:30	CONT	3109	TD MAIN FI PMP FI-P-18	TRIP
06:04:33	CONT	2894	RP CH D RC LO PRESS	TRIP
06:04:33	CONT	2314	RP REACTOR PROTECTION (RI D)	TRIP
06:04:34	CONT	2893	RP CH C RC LO PRESS	TRIP
06:04:34	CONT	2913	RP REACTOR PROTECTION (CH C)	TRIP
06:04:38	LOW	0098	CHDS PUMPS OUTLET HTR PRESS	42.7
06:04:58	CONT	2891	RP CH A RC LO PRESS	TRIP
06:04:59	CONT	2887	RP CH A RC HI PRESS	TRIP
06:05:01	CONT	2892	RP CH B RC LO PRESS	TRIP
06:05:08	LOW	1682	PLVL RC PRESSURIZER LVL (H2O)	178.4
06:05:39	LOW	0117	CHER FD PMP DISCH PRESS	323.1
06:05:48	CONT	2759	14STG FDN HTR A LVL (H2O)	107.1
06:06:13	BAD	0468	SP STM GEN B SHELL TEMP (EL 341)	-222.2
06:06:57	LOW	1729	HORCR HEAT/COOL RATE (DEGF/HR)	-102.5
06:06:59	NORM	1291	FLUX 10-D LEVEL 4 (HARD) WPS	-10.
06:07:22	CONT	3011	CRD OUT INHIBIT	ON
06:07:47	NORM	0563	RP SRCE RANGE III1 LVL (LOG CPS)	3.009
06:07:47	NORM	0570	RP SRCE RANGE III2 LVL (LOG CPS)	4.010
06:08:17	NORM	0003	SP STM GEN B S-U RANGE LVL (III)	26.5
06:08:17	CONT	3011	CRD OUT INHIBIT	OFF
06:09:37	CONT	3108	TD MAIN FI PMP FI-P-1A	TRIP
06:09:47	NORM	0002	SP STM GEN A S-U RANGE LVL (IN)	26.5
06:09:55	FLAG	3539	SOURCE RANG III1 AUTO ON/OFF	FAULT
06:11:14	BAD	0486	SP FDNTR VLV TRAIN B DP (PSI)	-222.2
06:11:32	CONT	3259	CHER FI PMP EF-P-29	OFF
06:11:38	NORM	0096	CHOD H/L LVL (H2O)	35.21
06:11:39	LOW	0119	CHER FD PMP 2B DISCH PRESS	154.
06:11:50	CONT	3258	CHER FI PMP EF-P-2A	OFF
06:11:52	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:11:54	LOW	0118	CHER FD PMP 2A DISCH PRESS	96.
06:11:57	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:12:07	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:12:12	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:12:44	NORM	0486	SP FDNTR VLV TRAIN B DP (PSI)	95.4
06:12:52	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:12:57	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:13:17	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:13:22	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:13:32	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:13:37	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:13:47	BAD	0571	RP INT RANGE III3 LVL (LOG WPS)	-22.22
06:14:10	NORM	0136	FEED PUMP 1A OUTLET PRESS	950.
06:14:22	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:14:25	LOW	0136	FEED PUMP 1A OUTLET PRESS	355.
06:14:27	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:15:17	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:15:22	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:16:40	NORM	0136	FEED PUMP 1A OUTLET PRESS	945.
06:16:42	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:16:47	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:17:42	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:17:47	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	10
06:17:52	BAD	0021	TOT FDN THRU AG8 HTR (KLB/H)	-222.2
06:17:57	NORM	0021	TOT FDN THRU AG8 HTR (KLB/H)	0
06:18:10	NORM	0404	RC PRESS REL VLV R/LB OUT TEMP	192.2
06:18:28	BAD	0040	MSGR 1B DR TO 3STGA HD FL (KLB/H)	-222.2
06:18:33	NORM	0040	MSGR 1B DR TO 3STGA HD FL (KLB/H)	0
06:18:38	BAD	0040	MSGR 1B DR TO 3STGA HD FL (KLB/H)	-222.2
06:18:47	CONT	2771	14STG FDN HTR A LVL HIGH	HIGH
06:19:54	CONT	2771	14STG FDN HTR A LVL HIGH	NORM
06:19:58	NORM	0030	10STGA-11STGA HTR-DRN FL (KLB/H)	16.7
06:20:06	CONT	3011	CRD OUT INHIBIT	ON
06:20:14	CONT	3011	CRD OUT INHIBIT	OFF
06:20:17	NORM	0571	RP INT RANGE III5 LVL (LOG WPS)	-10.09
06:20:20	CONT	3011	CRD OUT INHIBIT	ON
06:20:36	CONT	3011	CRD OUT INHIBIT	OFF
06:20:39	CONT	3011	CRD OUT INHIBIT	ON
06:20:43	NORM	0468	SP STM GEN B SHELL TEMP (EL 341)	261.1
06:21:11	CONT	3010	CRD REACTOR TRIP CONFIRM	TRIP
06:21:13	CONT	3011	CRD OUT INHIBIT	OFF
06:21:30	CONT	3016	CRD PROG LAMP FAULT	NO
06:21:55	LOW	0136	FEED PUMP 1A OUTLET PRESS	373.
06:22:24	CONT	3011	CRD OUT INHIBIT	ON
06:22:25	CONT	3011	CRD OUT INHIBIT	OFF
06:22:39	NORM	0136	FEED PUMP 1A OUTLET PRESS	936.
06:23:13	CONT	3011	CRD OUT INHIBIT	ON
06:23:16	CONT	3011	CRD OUT INHIBIT	OFF
06:23:19	CONT	3011	CRD OUT INHIBIT	ON
06:24:45	CONT	3011	CRD OUT INHIBIT	OFF
06:24:57	NORM	1729	HORCR HEAT/COOL RATE (DEGF/HR)	-24.3
06:26:04	CONT	3011	CRD OUT INHIBIT	ON
06:27:06	CONT	3011	CRD OUT INHIBIT	OFF
06:27:40	CONT	3014	CRD SEQUENCE FAULT	YES
06:28:27	CONT	3014	CRD SEQUENCE FAULT	NO

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06:28:57	CONT	3009	CRD SEQUENCE OVERRIDE	ON
06:29:42	CONT	2676	PRESS ITR GROUP 3	TRIP
06:29:43	BAD	0468	SP STM GEN B SHELL TRIP(FL 341)	-???.?
06:29:53	CONT	3009	CRD SEQUENCE OVERRIDE	OFF
06:29:53	CONT	3010	CRD REACTOR TRIP CONFIRM	TRIP
06:29:53	CONT	3016	CRD PROG LAMP FAULT	YES
06:30:58	BAD	0030	10STGA-11STGA ITR DRN FL(KLP/H)	-???.?
06:31:13	CONT	2676	PRESS ITR GROUP 3	TRIP
06:31:13	NORM	0468	SP STM GEN B SHELL TRIP(FL 341)	158.3
06:31:26	CONT	3011	CRD OUT INHIBIT	ON
06:32:05	CONT	3011	CRD OUT INHIBIT	OFF
06:32:10	CONT	3011	CRD OUT INHIBIT	ON
06:32:58	CONT	3011	CRD OUT INHIBIT	OFF
06:32:46	CONT	3011	CRD OUT INHIBIT	ON
06:33:10	CONT	3240	CHDS PUMP CO-P-1A	ON
06:33:22	NORM	0093	CHDS PUMPS OUTLET MOR PRESS	141.5
06:33:23	CONT	3251	CHDS PUMP CO-P-1C	OFF
06:33:27	CONT	3011	CRD OUT INHIBIT	OFF
06:33:42	BAD	0468	SP STM GEN B SHELL TRIP(FL 341)	-???.?
06:34:42	CONT	3010	CRD REACTOR TRIP CONFIRM	NORM
06:34:46	CONT	3016	CRD PROG LAMP FAULT	NO
06:35:44	BAD	0486	SP CONTR VLV TRAIN B DP (PSI)	-???.?
06:35:49	CONT	3009	CRD SEQUENCE OVERRIDE	ON
06:36:13	NORM	0486	SP CONTR VLV TRAIN B DP (PSI)	183.2
06:37:07	CONT	3011	CRD OUT INHIBIT	ON
06:37:03	CONT	3011	CRD OUT INHIBIT	OFF
06:37:10	CONT	3011	CRD OUT INHIBIT	ON
06:37:12	CONT	3011	CRD OUT INHIBIT	OFF
06:37:15	CONT	3011	CRD OUT INHIBIT	ON
06:38:22	CONT	3011	CRD OUT INHIBIT	OFF
06:38:33	CONT	3011	CRD OUT INHIBIT	ON
06:38:40	NORM	0402	RC PRESS REL VLV RV2 OUT TEMP	192.6
06:38:56	CONT	3011	CRD OUT INHIBIT	OFF
06:39:00	CONT	3011	CRD OUT INHIBIT	ON
06:39:00	CONT	3011	CRD OUT INHIBIT	OFF

00:04:00	27.44	38.3	30.2	45.42	148.9	70.9	570.	582.8	600.	501.	1309.	1383.	1380.	684.-	8.
00:04:15	27.37	38.1	30.2	45.61	151.0	75.5	578.	582.2	601.	504.	1308.	1383.	1379.	922.-	8.
00:04:30	27.38	38.1	30.8	45.16	117.0	50.1	558.	504.4	575.	537.	1285.	1355.	1352.	922.-	8.
00:04:45	27.35	38.0	30.2	42.00	42.7	25.2	519.	524.8	537.	504.	1261.	1333.	1329.	924.-	8.
00:05:00	27.33	38.4	30.8	41.05	42.9	26.0	518.	529.8	545.	507.	1257.	1329.	1326.	924.-	8.
00:05:15	27.32	38.4	30.5	41.16	39.1	23.5	510.	527.8	546.	512.	1265.	1330.	1332.	922.-	8.
00:05:30	27.31	38.0	30.9	40.49	41.6	22.7	516.	525.4	541.	505.	1265.	1337.	1333.	922.-	8.
00:05:45	27.30	38.3	30.4	40.17	37.3	24.6	515.	530.4	549.	512.	1261.	1386.	1077.	919.-	8.
00:06:00	27.30	38.2	30.2	40.35	43.2	24.1	518.	520.4	545.	507.	127.	1085.	1076.	919.-	8.
00:06:15	27.27	38.3	30.4	39.21	41.5	25.0	510.	523.8	546.	511.	15.	1085.	1076.	916.-	8.
00:06:30	27.27	38.1	30.3	39.71	43.0	25.2	520.	522.2	545.	510.	13.	1084.	1076.	910.-	8.
00:07:00	27.36	37.7	30.8	39.37	42.3	26.0	520.	529.2	545.	508.	14.	1084.	1075.	919.-	8.
00:08:30	27.33	37.9	30.4	38.58	30.9	23.6	516.	522.0	545.	511.	12.	1082.	1073.	924.-	8.
00:09:30	27.30	38.0	30.2	37.13	40.3	21.7	508.	525.6	545.	508.	12.	1083.	1074.	924.-	8.
00:10:30	27.10	38.1	30.0	36.71	41.1	23.2	510.	520.0	547.	512.	12.	1087.	1079.	930.-	8.
00:11:30	27.06	38.0	30.8	36.21	44.8	22.5	515.	524.4	549.	512.	12.	1087.	1079.	930.-	8.
00:12:30	27.06	38.3	32.2	35.33	50.8	25.3	510.	527.8	545.	507.	19.	29.	30.	930.-	8.
00:13:30	27.00	38.1	30.0	34.61	51.4	25.1	515.	520.0	540.	508.	18.	27.	28.	922.-	8.
00:14:30	27.06	37.5	30.1	34.69	48.3	27.8	510.	531.0	553.	503.	18.	27.	28.	930.-	8.
00:15:30	27.04	38.2	30.0	33.82	51.0	27.9	525.	532.2	574.	510.	19.	30.	29.	930.-	8.
00:16:30	27.03	38.2	30.1	33.05	55.6	20.7	522.	532.0	592.	515.	25.	33.	31.	924.-	8.

	150	156	159	160	191	192	193	194	195	196	197	198	187	90
05:46:45	47.4	49.98	.02	.08	.01	.02	.06	.06	.03	.04	.01	8.08	13.70	
05:47:45	49.9	49.98	.02	.08	.01	.02	.06	.06	.04	.04	.01	8.19	13.74	
05:48:45	52.0	49.98	.02	.09	.01	.02	.06	.06	.04	.00	.02	8.32	13.72	
05:49:45	55.2	49.98	.02	.12	.01	.02	.09	.06	.02	.04	.00	8.13	13.74	
05:50:45	58.7	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	8.23	13.72	
05:51:45	61.8	49.98	.02	.07	.01	.02	.06	.06	.04	.04	.01	7.98	13.81	
05:52:45	64.0	49.98	.01	.18	.01	.02	.09	.06	.02	.03	.00	8.23	13.89	
05:53:45	59.0	49.98	.02	.01	.00	.02	.05	.06	.04	.05	.02	8.30	13.93	
05:54:45	53.8	49.98	.00	.16	.00	.02	.04	.06	.02	.02	.00	8.26	13.89	
05:55:45	50.0	49.98	.02	.01	.00	.02	.05	.06	.04	.05	.02	8.20	13.89	
05:56:45	46.5	49.98	.02	.03	.00	.02	.05	.06	.04	.04	.02	8.34	13.93	
05:57:00	45.5	49.98	.02	.01	.00	.02	.05	.06	.04	.05	.02	8.36	13.93	
05:57:15	45.2	49.98	.02	.10	.00	.02	.05	.06	.02	.04	.00	8.34	13.89	
05:57:30	43.9	49.98	.00	.20	.00	.02	.04	.06	.01	.01	.01	8.23	13.89	
05:57:45	43.7	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	8.23	13.88	
05:58:00	43.0	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	8.15	13.88	
05:58:15	42.3	49.98	.02	.00	.01	.02	.06	.06	.04	.06	.02	7.67	13.61	
05:58:30	41.4	49.98	.02	.07	.01	.02	.06	.06	.03	.04	.00	7.85	13.63	
05:58:45	41.1	49.98	.02	.07	.01	.02	.06	.06	.03	.04	.02	7.95	13.59	
05:59:00	40.5	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	8.06	13.57	
05:59:15	40.0	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	8.10	13.59	
05:59:30	39.0	49.98	.02	.01	.01	.02	.06	.06	.04	.05	.02	8.19	13.65	
05:59:45	40.0	49.98	.02	.08	.01	.02	.06	.06	.03	.04	.00	8.10	12.88	
06:00:00	40.0	49.98	.02	.09	.01	.02	.06	.06	.03	.04	.01	8.00	12.69	
06:00:15	41.0	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	8.00	12.60	
06:00:30	40.5	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	8.19	12.54	
06:00:45	41.2	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	8.32	12.50	
06:01:00	41.5	49.98	.02	.12	.01	.02	.05	.06	.02	.04	.00	8.25	12.46	
06:01:15	41.5	49.98	.02	.09	.01	.02	.06	.06	.04	.00	.02	8.06	12.45	
06:01:30	41.3	49.98	.02	.04	.01	.02	.06	.06	.04	.05	.02	7.93	12.69	

06:01:45	41.2	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	10.42	12.33	
06:02:00	41.0	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	9.00	12.35	
06:02:15	41.0	49.98	.01	.14	.01	.02	.05	.06	.02	.03	.00	9.90	12.73	
06:02:30	36.8	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.03	9.78	12.73	
06:02:45	37.4	49.98	.02	.05	.01	.02	.06	.06	.04	.04	.02	9.67	12.80	
06:03:00	35.5	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	9.52	12.86	
06:03:15	34.0	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	9.65	12.88	
06:03:30	33.0	49.98	.02	.09	.01	.02	.06	.06	.03	.04	.01	9.93	12.91	
06:03:45	33.3	49.98	.02	.09	.01	.02	.05	.06	.03	.04	.00	9.93	12.97	
06:04:00	28.6	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	9.78	13.01	
06:04:15	27.4	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	9.65	13.03	
06:04:30	15.5	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	9.16	13.53	
06:04:45	13.0	49.98	.02	.11	.01	.02	.05	.06	.02	.03	.00	9.45	13.29	
06:05:00	12.2	49.98	.02	.07	.01	.02	.06	.06	.04	.04	.01	9.61	13.35	
06:05:15	10.5	49.98	.02	.10	.01	.02	.06	.06	.03	.04	.00	9.68	13.33	
06:05:30	30.0	49.98	.02	.02	.01	.02	.06	.06	.04	.05	.02	9.20	13.35	
06:05:45	29.2	49.98	.02	.09	.01	.02	.06	.06	.04	.06	.02	9.50	13.48	
06:06:00	30.0	49.98	.02	.09	.01	.02	.05	.06	.02	.04	.00	9.75	13.50	
06:06:15	30.0	49.98	.02	.08	.01	.02	.06	.06	.05	.04	.01	9.61	13.51	
06:06:30	30.4	49.98	.02	.05	.01	.02	.06	.06	.04	.05	.02	9.57	13.57	
06:07:00	30.4	49.98	.02	.07	.01	.02	.06	.06	.04	.04	.02	9.73	13.61	
06:08:30	14.2	49.98	.02	.14	.01	.02	.05	.06	.02	.04	.00	9.50	13.65	
06:09:30	30.0	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	9.60	13.68	
06:10:30	31.0	49.98	.02	.01	.01	.02	.06	.06	.04	.05	.02	9.86	13.23	
06:11:30	24.3	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.02	9.50	13.31	
06:12:30	25.5	49.98	.02	.03	.01	.02	.06	.06	.04	.05	.02	9.28	12.97	
06:13:30	25.4	49.98	.02	.04	.01	.02	.06	.06	.04	.05	.02	9.26	12.93	
06:14:30	20.0	49.98	.02	.09	.01	.02	.06	.06	.03	.04	.01	9.18	12.98	
06:15:30	25.0	49.98	.02	.06	.01	.02	.06	.06	.03	.04	.00	9.24	12.91	
06:16:30	20.5	49.98	.02	.00	.01	.02	.06	.06	.04	.00	.03	9.18	12.91	

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05:58:30	249.9	30.0	20.4	0	1102.	890.	897.	539.7	542.8-	0	7.85-	.01	.00	2127.	20.77
05:58:45	249.0	29.6	21.3	0	1102.	892.	893.	539.7	542.8-	0	7.95-	.01	.00	2130.	20.77
05:59:00	249.0	30.1	20.7	0	1109.	892.	893.	539.7	542.8-	0	8.08	.00	.00	2135.	20.77
05:59:15	249.1	30.0	20.7	0	1109.	891.	890.	539.7	542.8-	0	8.13	.00-	.01	2150.	20.77
05:59:30	249.1	29.4	20.5	0	1109.	891.	890.	539.7	542.8-	0	8.15-	.01-	.01	2150.	20.77
05:59:45	249.9	24.1	13.7	0	1109.	895.	890.	539.7	543.4-	0	8.10-	.02-	.01	2174.	20.77
06:00:00	249.9	15.4	2.0	0	1109.	905.	900.	539.7	543.4-	0	8.00-	.01	.00	2174.	20.73
06:00:15	222.3	9.0	.0	0	1104.	872.	815.	538.6	543.3-	0	8.00-	.01	.00	2237.	20.69
06:00:30	222.3	4.4	.0	0	1104.	872.	815.	538.6	543.3-	0	8.19	.00	.00	2237.	20.50
06:00:45	199.4	2.1	.0	0	1104.	829.	818.	538.4	541.6-	0	8.32	.00-	.01	2226.	20.50
06:01:00	198.4	1.3	.0	0	1104.	829.	818.	539.4	541.6-	0	8.25-	.01-	.01	2226.	20.55
06:01:15	167.0	1.2	.0	0	1104.	823.	820.	538.0	540.0-	0	8.00-	.02-	.01	2220.	20.54
06:01:30	163.0	1.2	.0	0	1104.	823.	820.	538.0	540.0-	0	7.93-	.01	.00	2220.	20.50

06:01:45	170.4	1.7	.0	0	1102.	876.	870.	536.7	538.9-	0	10.42-	.01	.00	2286.	20.58
06:02:00	170.4	3.3	.0	0	1102.	876.	870.	536.7	538.9-	0	0.001	.00	.00	2286.	20.62
06:02:15	188.6	4.3	.1	0	1100.	900.	970.	537.4	539.4-	0	9.90	.00-	.01	2050.	20.64
06:02:30	188.6	4.9	.9	0	1100.	900.	970.	537.4	539.4-	0	9.70-	.01-	.01	2050.	20.65
06:02:45	207.0	5.1	1.1	0	1100.	991.	1071.	541.6	543.9-	0	9.67-	.01-	.01	1980.	20.68
06:03:00	207.0	6.4	2.9	0	1100.	991.	1031.	541.6	543.9-	0	9.52-	.01	.00	1990.	20.70
06:03:15	223.0	7.4	.0	0	1111.	1053.	867.	547.2	548.9-	0	9.65-	.01	.00	1935.	20.75
06:03:30	223.8	7.4	.0	0	1111.	1058.	867.	547.2	548.9-	0	9.93	.00-	.01	1935.	20.77
06:03:45	230.3	7.8	.0	0	1100.	1050.	673.	554.0	548.2-	0	9.05-	.01-	.01	1881.	20.87
06:04:00	239.3	7.0	.0	0	1100.	1050.	670.	554.0	548.2-	0	9.78-	.01-	.01	1881.	20.87
06:04:15	252.2	9.5	.0	0	1100.	1050.	595.	558.5	541.1-	0	9.65-	.01-	.01	1841.	20.89
06:04:30	252.2	6.6	.0	0	1100.	1050.	595.	558.5	541.1-	0	9.10-	.01	.00	1841.	20.96
06:04:45	205.4	3.9	.0	0	1100.	853.	750.	559.3	553.5-	0	9.45	.00	.00	1803.	20.96
06:05:00	205.4	2.2	.0	0	1100.	853.	750.	559.3	553.5-	0	9.61	.00-	.01	1803.	20.96
06:05:15	277.0	.9	.0	0	1111.	737.	856.	554.2	553.3-	0	9.40-	.01-	.01	1762.	20.91
06:05:30	277.0	.0	.0	0	1111.	737.	856.	554.2	553.3-	0	9.20-	.02	.00	1762.	20.92
06:05:45	208.1	.0	.6	0	1110.	649.	928.	547.7	530.0-	0	9.50	.00	.00	1745.	20.90
06:06:00	280.1	.0	1.3	0	1110.	649.	928.	547.7	538.0-	0	9.75	.00-	.01	1745.	20.88
06:06:15	294.1	.0	1.7	0	1110.	604.	900.	541.2	544.5-	0	9.01	.01-	.01	1733.	20.87
06:06:30	294.1	.0	2.3	0	1110.	604.	900.	541.2	544.5-	0	9.37-	.02-	.01	1733.	20.87
06:07:00	297.4	2.1	0.9	0	1110.	789.	928.	547.2	554.7-	0	9.75	.01-	.01	1743.	27.03
06:07:30	297.9	9.1	17.1	0	1110.	846.	902.	549.5	556.0-	0	9.50	.01	.00	1764.	27.29
06:08:00	294.4	18.9	27.6	0	1111.	846.	869.	545.3	555.2-	0	9.00	.01-	.01	1812.	27.30
06:08:30	290.1	20.1	30.4	0	1114.	832.	847.	548.0	553.2-	0	9.00	.00-	.01	1803.	27.21
06:09:00	288.9	41.2	48.8	0	1114.	819.	831.	546.4	550.1-	0	9.53	.01	.00	1800.	27.12
06:12:30	288.5	40.3	52.7	0	1100.	828.	834.	547.9	547.5-	0	9.20	.01-	.01	1800.	27.00
06:13:30	285.7	46.1	51.9	0	1111.	842.	841.	547.7	546.6-	0	9.20	.02	.00	1923.	27.02
06:14:30	283.6	45.7	50.7	0	1114.	851.	840.	547.1	545.1-	0	9.10	.02	.00	1940.	26.90
06:15:30	281.9	47.3	49.0	0	1111.	860.	850.	548.5	545.3-	0	9.21	.02	.00	1971.	26.91
06:16:30	279.7	44.9	48.5	0	1111.	860.	860.	548.5	545.3-	0	9.10	.02-	.01	1903.	26.92

05:40:45	27.04	30.0	30.1	20.05	144.9	106.6	890.	587.0	1014.	504.	93.	100.	107.	907.-	8.
05:47:45	27.00	30.2	30.0	18.94	141.8	100.1	591.	579.2	1000.	552.	87.	100.	101.	898.-	8.
05:40:45	27.00	30.2	30.0	10.05	130.9	67.9	570.	569.4	1002.	552.	77.	91.	91.	904.-	8.
05:47:45	27.00	30.3	30.2	19.08	141.3	101.3	590.	582.2	1024.	508.	91.	104.	104.	838.-	8.
05:50:45	27.04	37.9	30.7	18.14	139.4	90.3	500.	579.2	1000.	550.	84.	98.	93.	901.-	8.
05:51:45	27.04	37.7	30.0	10.41	140.3	95.5	580.	572.0	1001.	559.	86.	98.	98.	890.-	8.
05:52:45	27.04	30.1	30.0	10.40	147.7	111.1	597.	565.0	1010.	500.	90.	112.	113.	901.-	8.
05:53:45	27.00	30.1	30.0	10.49	141.5	97.0	500.	574.2	1012.	560.	91.	105.	104.	901.-	8.
05:54:45	27.00	30.3	30.0	10.35	141.2	90.5	502.	580.0	1011.	550.	90.	104.	103.	887.-	8.
05:55:45	27.00	30.1	30.9	10.02	130.0	87.0	570.	569.2	990.	549.	70.	92.	91.	892.-	8.
05:56:45	27.00	30.1	30.0	10.53	137.3	90.7	503.	569.4	1002.	551.	62.	94.	95.	896.-	8.
05:57:00	27.04	38.5	30.2	19.17	130.0	90.1	580.	572.6	999.	549.	76.	90.	92.	890.-	8.
05:57:15	27.00	30.1	30.7	10.28	130.0	90.4	570.	567.0	1035.	551.	80.	92.	92.	830.-	8.
05:57:30	27.00	37.9	30.1	18.74	130.3	80.1	500.	567.2	933.	540.	77.	91.	91.	898.-	8.
05:57:45	27.00	30.1	30.2	10.40	140.5	95.0	504.	574.2	1000.	553.	83.	95.	97.	901.-	8.
05:58:00	27.00	30.0	30.5	19.35	130.3	90.3	501.	565.2	1002.	552.	83.	90.	90.	901.-	8.
05:58:15	27.00	30.3	30.3	19.52	130.7	91.2	504.	579.4	1000.	550.	83.	98.	96.	904.-	8.
05:58:30	27.00	30.3	30.9	19.28	130.0	90.5	579.	577.2	1000.	549.	81.	94.	94.	904.-	8.
05:58:45	27.00	30.0	30.4	19.04	130.0	80.0	570.	569.6	993.	545.	77.	91.	91.	890.-	8.
05:59:00	27.00	30.3	30.8	20.05	130.3	91.0	504.	569.0	1010.	550.	80.	93.	93.	890.-	8.
05:59:15	27.04	30.2	30.5	20.32	132.0	77.1	570.	569.0	997.	540.	66.	80.	80.	904.-	8.
05:59:30	27.04	30.1	30.6	20.05	120.0	80.4	570.	564.4	978.	537.	69.	83.	83.	904.-	8.
05:59:45	27.00	37.9	30.0	21.30	144.6	42.1	441.	482.2	703.	322.	40.	62.	47.	901.-	9. INITIATOR
06:00:00	27.00	30.1	30.0	20.14	140.0	135.8	155.	150.0	235.	123.	1416.	1495.	1492.	901.-	8.
06:00:15	27.10	30.0	30.7	25.39	120.7	80.3	95.	88.2	133.	70.	1280.	1305.	1302.	904.-	8.
06:00:30	27.10	37.7	30.1	32.00	120.1	84.0	86.	87.0	113.	70.	1290.	1300.	1302.	904.-	8.
06:00:45	27.24	30.1	30.6	30.11	127.0	83.4	83.	84.2	90.	60.	1200.	1302.	1300.	901.-	8.
06:01:00	27.27	38.2	30.6	30.25	125.9	81.2	79.	81.4	90.	60.	1204.	1308.	1305.	901.-	8.
06:01:15	27.32	38.1	30.2	41.80	120.0	78.4	70.	77.0	80.	61.	1300.	1374.	1371.	901.-	8.
06:01:30	27.32	38.3	30.1	42.80	110.0	77.9	401.	398.0	348.	310.	1301.	1375.	1372.	901.-	8.

06:01:45	27.44	30.3	30.9	41.10	150.9	102.7	110.	130.0	120.	90.	1321.	1390.	1392.	904.-	8.
06:02:00	27.40	37.7	30.0	44.33	147.7	81.0	570.	572.0	609.	573.	1303.	1370.	1374.	904.-	8.
06:02:15	27.45	30.0	30.1	40.60	143.8	81.7	504.	569.2	609.	573.	1312.	1367.	1363.	898.-	8.
06:02:30	27.30	37.0	30.7	40.46	143.4	79.8	570.	566.4	605.	508.	1310.	1365.	1361.	898.-	8.
06:02:45	27.32	30.1	30.2	44.33	150.5	77.3	570.	564.4	602.	506.	1307.	1361.	1378.	893.-	8.
06:03:00	27.43	30.2	30.1	45.05	150.1	70.3	575.	563.0	605.	507.	1311.	1365.	1362.	893.-	8.
06:03:15	27.44	37.8	30.3	45.07	150.5	77.7	577.	565.0	602.	506.	1309.	1364.	1360.	890.-	8.
06:03:30	27.40	30.4	30.3	45.43	149.1	70.1	575.	563.0	602.	500.	1308.	1363.	1360.	890.-	8.
06:03:45	27.44	30.1	30.9	44.30	150.2	70.9	575.	562.0	605.	508.	1300.	1362.	1379.	894.-	8.
06:04:00	27.41	30.3	30.2	45.42	146.9	70.9	570.	562.0	600.	501.	1309.	1363.	1360.	894.-	8.

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