

EMOV LICENSE SUBMITTAL 2-29-80

LITIGATION REQUIREMENTS

DO NOT DESTROY, ADD, DELETE, ANNOTATE,
OR CHANGE ANY DOCUMENT WITHIN THIS
FOLDER.

LITIGATION

CASE

B+W

PROJECT NO.

00161

B+W
Deft-Exh. For ID 439
Plf. Exh. in EV
Catherine Cook CC
Doyle Reporting, Inc. 2/19/82

HICC-1-1

8307110679 800123
PDR ADDCK 05000289
HOL

W 23679

TO: Q. BILLINGSLEY

FROM: J. STUBBS

DATE: 1/23/80

SUBT: RAD WASTE DISPOSAL / RC LEAKOFF TEMP RECORDER YNTR767

AS REQUESTED IN YOUR LETTER TO ME DATED 1/22/80, AN INVESTIGATION WAS MADE TO DETERMINE THE VALIDITY OF DATA RECORDED BY THE RAD WASTE DISPOSAL / RC LEAKOFF TEMP RECORDER. THE FOLLOWING CONCLUSIONS WERE MADE:

1. A TEST WAS CONDUCTED TO DETERMINE CYCLE TIMES BETWEEN EACH POINT WITHIN A BANK AND THE TIME REQUIRED TO CYCLE THROUGH ALL 24 POINTS PER BANK.
 - a. POINT TO POINT : 6.0 SEC
 - b. CYCLE 24 POINTS : 2 MIN 24 SEC

THESE VALUES WERE THE SAME FOR ALL 3 BANKS.

2. MECHANICAL MALFUNCTION OF THE IMPRINT WHEEL / POINT INDICATOR LINKAGE PREVENTS DETERMINING WHERE A PARTICULAR POINT MONITORED WILL BE PRINTED ON THE CHART PAPER. THIS PROBLEM HAD APPARENTLY EXISTED FROM THE DATE OF INSTALLATION.
3. GAPS IN THE PRINTED DATA AND VARIATIONS IN CHART SPEED EXIST ON ALL CHARTS AND PREVENT AN ACCURATE TIME REFERENCE FROM BEING ESTABLISHED OTHER THAN END OF ROLL TIME. THE ACTUAL ~~23600~~

SPEED IS SUPPOSED TO BE 4"/HR.

4. ALL R_c LEAKOFF TEMPERATURES ARE IN AN AREA $< 200^\circ$ WHERE SEVERAL OTHER POINTS HAVE ALSO BEEN PRINTED.
5. THE TIME NECESSARY TO READ A DAY'S WORTH OF DATA FOR ALL VALVE LEAKOFF TEMPERATURES WOULD VARY FROM CHART TO CHART. THE BEST ESTIMATE I CAN GIVE TO READ EACH SET OF COMPLETE DATA WOULD BE 1 WEEK PER DAY PROVIDING THE DATA COULD BE READ AT ALL.
6. THERE ARE SEVERAL OTHER MECHANICAL PROBLEMS WITH THIS RECORDER WHICH DO NOT AFFECT RECORDER ACCURACY BUT MAKE READING THE CHARTS MORE DIFFICULT.
7. THIS SYSTEM USES A 150° REFERENCE JUNCTION BOX OVEN TO COMPENSATE FOR USE OF COPPER WIRE AS PART OF THE T/C LEADS WHICH, IF LEFT UNCORRECTED, CAN CAUSE ERRONEOUS INPUT VOLTAGES. PROPER OPERATION OF THIS OVEN CANNOT BE VERIFIED SINCE IT IS LOCATED IN THE REACTOR BUILDING BASEMENT. AT THIS TIME THE OVEN IS INOPERABLE.

FOR THE ABOVE REASONS, I FEEL THAT, WITH THE EXCEPTION OF THE PRESSURIZER RELIEF VALVE UPSTREAM APE TEMPERATURES (9 POINTS OF A TOTAL OF 66 POINTS USED), ALL OTHER DATA CANNOT BE RELIED UPON TO ACCURATELY REFLECT THE TRUE CONDITIONS OF THE PARAMETER BEING MONITORED.

I HAVE ATTACHED A COPY OF THE CHART PAPER. THIS REPRESENTS A "BETTER THAN AVERAGE" COPY, THE ORIGINAL BEING A LITTLE EASIER TO READ.

PLEASE ADVISE ME OF YOUR INTENTIONS IN ANALYSING THE CHARTS. I CAN BE REACHED AT EXT. 8579 OR 8482.

V/R *J. Stull*

ATTACHMENT: 1

W 23692

100-100000

- W 23716

1-22-80

1. What is needed from J. Stubbs:
 - (a) sample of chart showing & explaining problem(s)
reading the chart (clearly, etc)
 - (b) how much time is required to read a
days worth of data (for all valve shut-off times)

gave Stubbs ink copy of this on 1-22-80

W 23680

BORWIN
(Hunters)
10 CFR 50.4
APPENDIX A
Criterion 30
no waste
calculation

Region 3

Chicago 312-858-2660/2

Tony Facano NRC

King of Prussia

215 337-5287

photographs

Bethesda md
Wash, D.C.

Don Kirkpatrick

heat Xfer calculations

(301) 202 492 8180 no calc
leaked air

Ron Toul
Tom Hawkins

9:30

W 23681

DOWNSTREAM LEAKOFF TEMPERATURES MEASURED ON
TR-7167 RAD WASTE DISPOSAL - RC LEAKAGE RECOVERY TEMP MP RECORDER

WDL-TE-	POINT	BANK	CHANNEL	DOWNSTREAM OF
7113	14	1	14	RC-P-2B Gasket Drain
7115	16	1	16	RC-P-1B Gasket Drain
7117	18	1	18	RC-P-2A Gasket Drain
7119	20	1	20	RC-P-1A Gasket Drain
7121	22	1	22	Reactor Vessel
7123	24	1	24	DH-V171 (Bypass pri loop to DH removal)
7125	26	2	2	DH-V1 (Pri loop to DH removal pumps)
7128	27	2	3	RC-V149 (Pyr aux spray line)
7130	29	2	5	RC-V1 (Pyr spray line)
7132	31	2	7	RC-V3 (Pyr spray line)
7134	33	2	9	RC-V122 (Pyr sampling line)
7136	35	2	11	RC-V2 (EMOV block valve)
7138	37	2	13	RC-V117 (Pyr sampling line)
7140	39	2	15	RC-V137 (Pyr to RCDT)
7142	41	2	17	DH-V2 (Pri loop to DH removal pumps)
7143	44	2	20	MU-V33D (RCP seal return)
7145	46	2	22	MU-V33C (RCP seal return)
7147	48	2	24	MU-V25 (RCP seal outlet to seal return cooler)
7149	50	3	2	CA-V1 (Pyr atm space to sample cooler)
7151	52	3	4	CA-V3 (Pyr atm space to sample cooler)
7153	54	3	6	MU-V33A (RCP seal return)
7155	56	3	8	MU-V33B (RCP seal return)
7158	57	3	9	MU-V18 (Pri loop to letdown cooler)
7160	59	3	11	RC-V123 (Sampling line, upstream letdown cooler)
7162	61	3	13	MU-V213 (RC-V161 spare)
7164	63	3	15	MU-V1A (Pri loop to letdown cooler)
7166	65	3	17	MU-V2A (Letdown cooler to block & pipe)

ELM 55656

W 23682

Deadline End of Next Week

1-35-80

1. Locking analysis: (2) data pts: (a) ^{T/C} 171° at 2000' _{→ 176°} (b) 265' ^{T/C} 171°

(a) I had a leak at lower press. end. work have temp. substantially higher than 171°

(b) Locking analysis shows that conductivity could not result

(c) need Rx Bldg temp in area of PORV

(d) how many T/C on each pipe

a. ^{Locking} Pin from Lee: I sent their reports and

-
- ~~REP sent off~~
- Tie 1977 data to leakage (REDT levels, repairs, Rx Bldg temp)
 - No same for 1978 & 1979

- and Bursley have arrived at 130° temp
- when did control rm start leak rate calculation, REP still leaving, etc

W 23683

RCDT. pumpdown dates and times
from day 1 through 1978
operators log

March 26, 1976 - April 1, 1977

Pre-treatment
Receipt of fuel

April 2, 1977 - October 21, 1977

~ 14 July maintaining 160-210° 400-450°

- 25 July drained for head removal

8/12/77 0430 R.C. Drain Tank drained down to an indicated
level of $< 70''$ (after draining a little)

8/17/77 1100 Drained RC DR TK to 70"

8/21/77 0940 Drained RC TK to 75"
1230 Drained RC Drain TK to 75"

9/3/77 0030 RC Drain TK drained to 78" Panel 9A

9/4/77 1820 Commenced draining RC Drain Tank 88"
1900 Secured draining RC Drain Tank

9/6/77 2130 Drained RC Drain Tank to 77"

9/13/77 2240 Shut RC-V-2 Pre Electronic is leaking by
9/15/77 0509 closed RC-V-2 due to suspected leakage on RC-RV-2

W 23684

8579

1-25-80

- J. Brummer name was given to me by Putnam
 - 1. Brummer remembers a discussion being held, but can't recall where the discuss. was held with: what the conclusion was.

Stubbs is calling NRC inspector who worked on EMOV leakage. Stubbs is calling to determine if NRC used computer T/E reading only of many T/E readings off the waste system strip charts

ask Jim Stubbs if Wallace has any comment on the increasing leak rate

8579

W 23685

DATE	TIME	TAVE	PER LVL	RCOT LVL
3/29/78	07:10:32	532.258	96.402	0.130
4/10/78	02:33:18	533.656	100.519	***
4/10/78	22:57:53	533.430	97.241	3.260
4/12/78	21:38:10	532.938	100.108	5.040
4/13/78	04:52:49	533.070	95.618	4.660
4/14/78	02:39:34	535.070	167.502	2.480
4/15/78	06:27:09	534.453	156.744	2.520
4/15/78	16:35:05	533.883	156.588	3.210
4/16/78	05:05:23	532.797	128.199	2.290
4/16/78	18:45:34	533.688	123.312	2.370
4/18/78	08: . . .	543.531	140.930	2.670
4/18/78	19:03:13	566.508	197.988	2.960
4/20/78	02:30:59	574.719	211.607	2.830
4/21/78	05:43:18	571.227	0.000	2.240
5/15/78	19:17:45	533.888	103.451	2.810
5/18/78	01:28:19	533.000	218.879	2.130
5/19/78	23:24:51	544.844	304.941	2.780
5/20/78	19:35:29	535.141	304.801	2.630
5/21/78	06:20:31	534.680	304.871	3.060
5/21/78	20:39:57	534.758	305.391	2.840
5/22/78	06:10:06	532.328	305.242	2.730
5/23/78	12:29:45	536.305	292.141	2.090
5/23/78	20:42:56	533.008	292.570	2.020
5/24/78	01:40:36	533.031	292.227	2.060
5/24/78	17:21:07	532.961	291.965	2.100
5/28/78	13:23:04	533.888	139.547	1.461
5/28/78	19:29:40	533.888	139.553	1.460
5/30/78	14:26:14	533.888	139.701	1.062 W 23686
6/2/78	15:15:44	535.656	306.684	1.750

6/3/78	05:57:54	528.125	253.201	1.911
6/3/78	09:22:48	528.828	281.023	1.980
6/4/78	00:04:53	535.859	297.223	2.190
6/4/78	16:18:14	533.203	255.275	2.410
6/7/78	03:51:37	\$9888	102.909	2.231
6/7/78	06:44:23	\$9999	102.936	2.181

1-22-79

Spoke with Bill Fels on 1-22-79 about ECDT
level. He says that no compensation was
used to determine level

W 23688

1
rcsl

DATE: 10/ 1/78 REACTOR COOLANT LEAKAGE TEST
TIME: 19:29: 05 *2* SP 2301-301

NOTE: IF OPERATOR ACTION DECREASES RCS VOLUME THE DATA ENTRY FOR THAT ACTION MUST BE NEGATIVE

DESIRED INTERVAL (1-8 HOURS)

1
ENTER THE INITIAL REACTOR COOLANT DRAIN TANK LEVEL FROM PATCH PANEL DVM#64

2.72

ENTER THE FINAL REACTOR COOLANT DRAIN TANK LEVEL FROM PATCH PANEL DVM#64

2.75

ENTER OPERATOR CAUSED CHANGES TO THE RCOT FROM DS 4 (2301-301)

0
ENTER OPERATOR CAUSED CHANGES FROM DS 4 (2301-301)

0
ENTER IDENTIFIED LEAKAGE FROM DS 3 (2301-301) (GPM)

0
ENTER PRIMARY TO SECONDARY OTSG TUBE LEAK (GPM)

TIME	TCA (F)	THA (F)	TCB (F)	THB (F)	TAVE (F)	PRZR LVL (IN)	MUTK LVL (IN)	RCOT LVL (VOLT)
19:29:28:	571.141	591.055	571.023	591.344	581.133	224.377	71.606	2.720
20:29:28:	571.630	591.563	571.508	591.875	581.648	224.344	73.041	2.750

GROSS LEAK RATE (<30 GPM): 0.2711 GPM

TOTAL IDENTIFIED RCS LEAK RATE (<10 GPM): 0.0936 GPM

NET UNIDENTIFIED LEAK RATE (<1 GPM): 0.1775 GPM

OPERATOR: *Dennis Olson* 5479

APPROVED: *HA 10/1*

• temps of valve leak off

• arrival of water in tank

• check out if any further correct
must be done to tank

• pump on Times W 23689

STOP 0

ATTACHMENT

END DATE PROGRAM IS (LATEST RECOVERY TIME)

H 23693

DATE:

CHARTS	(DATE, TIME, & LINK CHARTS)	(✓OK)
ANNUNCIATORS	(TEST, REPLACE BULBS)	(✓)

SEND FOLLOWING TO NUC. ENG. @ 2400 HRS.
I- STATION DAILY LOG SHEET (✓)

COLLECT ALL LOOSE COMPUTER UTILITY, ALARM AND PERIODIC
TYPEWRITER SHEETS (OTHER THAN DAILY SUMMARY AND
PRINTOUTS ABOVE) AND COVER SHEET TO FRONT AND FILE (✓)

FILE BRIGADE LOG (ATTACHED) ~~KEEP~~ HANDY AT CONSOLE.
FOR EACH SHIFT (✓)

CONTROL FWR SW-S-1C, 2C, 3 & DFC	(4 RED LITES)	(ON)
SR DISCH. HDR. PRESSURE	(19-21)	(PSIG)

RIVER WATER AT UNIT (RED PEN)	(LOCAL/PNL 8)	(+ °F)
STATION (GREEN PEN)	(LOCAL/PNL 8)	(+ °F)
NR HDR "B" PRESSURE	(16-28)	(PSIG)
NR HDR "A" PRESSURE	(16-28)	(PSIG)
NR PUMP DISCH TEMP. (WHEN DE-ICING)	(38-48) (Pt 917/924)	(°F)
EFFLUENT FLOW	(MIN. 7.2)	(MGD)
SSCCW HEAD TK. LEVEL	(2'-6')	(FT.)
SSCCW SUPPLY TEMP. TI-484	(80-95°)	(°F)
DHCCW HEAD TK. "A" LEVEL	(33-55")	(IN.)
DHCCW HEAD TK. "B" LEVEL	(33-55")	(IN.)
NSCCW SUPPLY TEMP.	(75-95)	(°F)
NSCCW HEAD TK. LEVEL	(18-75")	(IN.)
ICCW HEAD TK. LEVEL	(14-20)	(IN.)

1.0

W 23694

PAGE 17

12 CW PUMPS DISCH. PRESS. (IN SERVICE)	(33-447)	(OK)
VACUUM PUMP CLR OUTLET TEMPS.	(MAX. 105°F)	(F)
CONDENSER AP (COLD-HOT)	LOOP A	(PSID)
(NOM. 12 PSID)	LOOP B	(PSID)
LO-2-1 (VIB. POWER SUPPLY)	(BURNING)	(F)
LO-2-2 (VIB. SEAL TK ECH)	(BURNING)	(F)
FW-2-1A/B VAPOR EXTRACTORS (2)	(BURNING)	(F)
1A COMPRESSORS FLOW FAULT LIGHTS (2)	(AMBER)	(OUT)

[illegible]

PATEL 19

STATION BATTERY 2-1 CHARGE/DISCH	(P & N)	(AMPS)
STATION BATTERY 2-2 CHARGE/DISCH	(P & N)	(AMPS)
VITAL BUSES 2-1, 2-2, 2-3 (ALT/NORM FEEDER)	(NORM.)	(✓OK)
VITAL BUSES 2-2, 2-4 (ALT/NORM FEEDER)	(NORM.)	(✓OK)

h	a	N	a	N
N	d	N	a	N

PATEL 6

WHITE PERMISSIVE LIGHTS 6900/4160 BBS (ALL ON) (✓)
MCC's WHITE SWR AVAIL. LIGHTS (ALL ON) (✓)
500 KV BUS VOLTS 4 BUS (KVOLTS)
8 BUS (KVOLTS)

11-7	7-3	3-11
-	/ / / / /	/ / / / /
	/ / / / /	/ / / / /

PANEL 5

CONDENSER HOTWELL LEVEL	(24.5-27.5)	(IN.)
COND. STORAGE TANK "A" LEVEL	(>14.5")	(FT.)
COND. STORAGE TANK "B" LEVEL	(>14.5")	(FT.)
GS HEADER PRESSURE	(135-140)	(PSIG)
GS HP SUPPLY PRESSURE	(3-5)	(PSIG)
TURB. L.O. PRESSURE	(14-18)	(PSIG)
SSCCW DP (STABLE)	(42-44)	(PSID)
TURB. L.O. TEMP.	(90-120)	(°F)
SGFP 1B L.O. TEMP.	(100-120)	(°F)
SGFP 1A L.O. TEMP.	(100-120)	(°F)
SGFP 1B CONTROL OIL PRESS.	(100-110)	(PSIG)
SGFP 1A CONTROL OIL PRESS.	(100-110)	(PSIG)
SGFP 1B BEARING OIL PRESS.	(12-15)	(PSIG)
SGFP 1A BEARING OIL PRESS.	(12-15)	(PSIG)

[illegible]

PANEL 3

MAKEUP FILTER AP (INSERV. A OR B)	(25 MAX)	(PSID)
PURIF. & DEBOR. FILTER AP (INSERV. A OR B)	(25 MAX)	(PSID)
SEAL INJECT. FILTER AP (INSERV. A OR B)	(25 MAX)	(PSID)
SEAL RETURN FILTER AP	(5 MAX)	(PSID)

RC-PUMP TOTAL SEAL LEAKAGE

(MAX. 1.90 GPM)

PANEL 25

11-7	7-3	3-11

CALL CHEMISTRY TO OBTAIN

DISTILLATE SAMPLE (IF RUNNING TIME CALLED)

W 23696

3.0

INSTRUCTIONS: For each shift fill in the names of the persons who are designated as the Fire Brigade. Those who are designated must be of that responsibility.

NAMES OF THOSE DESIGNATED			
POSITION	11-7	7-3	3-11
UNIT 2 AUX. OPERATOR #1			
UNIT 2 AUX. OPERATOR #2			
UNIT 2 AUX. OPERATOR #3			
UNIT 2 AUX. OPERATOR #4			
H P TECH #5			
SHIFT FOREMAN			
UNIT 2 AUX. OPERATOR #6			
UNIT 2 AUX. OPERATOR #7			

NOTE: At end of day attach to the day's Control Room Operators log.
This change is in effect until Shift Supervisor is not required to stay in Unit 2 Control Room due to the emergency status of Unit 2.

W 23697

Date: _____

OPERATIONAL FUNCTIONS DATA SHEET

List All Noteworthy Functions As
Performed During Shift

2300-0700

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

0700-1500

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

1500-2300

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

	11-7	7-3	3-11
GRO SIGNATURE			
SHIFT FOREMAN SIGNATURE			

W 23698

00:00:00 03/27/79

00:00:30	FLAG	3585	RC4A-TE3	INSTR CONDITION	BAI)
00:00:30	FLAG	3586	RC4B-MS	INSTR CONDITION	BAI
00:11:43	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C		NORM
00:17:08	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C		TRIP
00:50:27	NORM	1765	XRW XENON REACTIVITY (PCT)		2.59
00:50:27	NORM	1766	XRW PEAK XENON REACTIVITY (PCT)		4.37
00:56:11	CONT	2738	D-G ROOM AIR CPRSR DF-P-2A		NORM

01:00:00 03/27/79

01:00:24	CONT	2738	D-G ROOM AIR CPRSR DF-P-2A		TRIP
01:00:30	FLAG	3585	RC4A-TE3	INSTR CONDITION	GOOD
01:00:30	FLAG	3586	RC4B-MS	INSTR CONDITION	GOOD
01:56:25	LOW	1744	PRUP POWER RATIO UPPER:TOT (PCT)		47.77
01:56:25	HIGH	1745	PRLW POWER RATIO LOWER:TOT (PCT)		52.26

02:00:00 03/27/79

02:00:29	FLAG	3586	RC4B-MS	INSTR CONDITION	BAI
02:03:00	BAD	1021	RB AIR CLG COILS B EMER DISCH		-???.?
02:03:30	NORM	1021	RB AIR CLG COILS B EMER DISCH		66.5

03:00:00 03/27/79

03:08:26	NORM	1744	PRUP POWER RATIO UPPER:TOT (PCT)		48.74
03:08:26	NORM	1745	PRLW POWER RATIO LOWER:TOT (PCT)		51.29
03:28:44	CONT	2726	RB SUMP PUMP WDL-P-2A		ON
03:31:57	CONT	2726	RB SUMP PUMP WDL-P-2A		OFF

04:00:00 03/27/79

04:15:20	APTC	0207	RC DRAIN TANK LEVEL (INCHES)		
04:18:54	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C		NORM
04:24:18	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C		TRIP
04:50:00	BAD	1021	RB AIR CLG COILS B EMER DISCH		-???.?
04:50:30	NORM	1021	RB AIR CLG COILS B EMER DISCH		66.4

05:00:00 03/27/79

05:13:28	ENDA	1496	PPMB PARTS PER MILLION BORON		1028.
05:16:08	ENDA	1496	PPMB PARTS PER MILLION BORON		1027.
05:41:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)		-???.?
05:42:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)		- 20.0
05:51:42	CONT	2738	D-G ROOM AIR CPRSR DF-P-2A		NORM
05:56:13	CONT	2738	D-G ROOM AIR CPRSR DF-P-2A		TRIP

06:00:00 03/27/79

06:17:11	BAD	1143	BACKGROUND 6-G: (NANOAMPS)		-???.?
06:18:11	NORM	1143	BACKGROUND 6-G: (NANOAMPS)		- 20.0
06:46:11	BAD	1143	BACKGROUND 6-G: (NANOAMPS)		-???.?
06:47:11	NORM	1143	BACKGROUND 6-G: (NANOAMPS)		- 20.0

07:00:00 03/27/79

H 23699

07:42:30	CONT	2727	RB SUMP PUMP WDL-P-2B	OFF
07:53:02	CONT	2680	PRESS HTR GROUP 7	NORM
07:53:05	CONT	2680	PRESS HTR GROUP 7	TRIP
07:53:08	CONT	2680	PRESS HTR GROUP 7	NORM
07:53:09	CONT	2680	PRESS HTR GROUP 7	TRIP
08:00:00	03/27/79			
08:03:39	HIGH	0177	SSCC WATER HOTK LEVEL	6.334
08:28:06	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C	NORM
08:30:31	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
08:31:01	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.4
08:33:32	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C	TRIP
08:36:54	NORM	0177	SSCC WATER HOTK LEVEL	6.250
09:00:00	03/27/79			
09:00:30	FLAG	3585	RC4A-TE3 INSTR CONDITION	BAD
09:11:08	LOW	0179	BORATED WTR RCYV PMP DISCH PRESS	24.5
09:12:38	NORM	0179	BORATED WTR RCYV PMP DISCH PRESS	82.8
09:31:31	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
09:32:01	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.3
10:00:01	03/27/79			
10:00:30	FLAG	3585	RC4A-TE3 INSTR CONDITION	GOOD
10:21:03	CONT	2738	D-G: ROOM AIR CPRSR DF-P-2A	NORM
10:25:20	CONT	2738	D-G: ROOM AIR CPRSR DF-P-2A	TRIP
11:00:00	03/27/79			
11:00:30	FLAG	3585	RC4A-TE3 INSTR CONDITION	BAD
11:14:09	CONT	2651	RB AIR CLG FAN AH-E-11E	TRIP
11:24:01	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
11:24:30	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.3
11:59:44	CONT	2726	RB SUMP PUMP WDL-P-2A	ON
12:00:00	03/27/79			
12:00:30	FLAG	3585	RC4A-TE3 INSTR CONDITION	GOOD
12:01:13	CONT	2726	RB SUMP PUMP WDL-P-2A	OFF
12:21:10	BAD	1143	BACKGROUND 6-G: (NANDAMPS)	-???.?
12:22:10	NORM	1143	BACKGROUND 6-G: (NANDAMPS)	- 20.0
12:31:10	BAD	1143	BACKGROUND 6-G: (NANDAMPS)	-???.?
12:32:10	NORM	1143	BACKGROUND 6-G: (NANDAMPS)	- 20.0
12:45:27	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C	NORM
12:50:50	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C	TRIP
13:00:01	03/27/79			
13:00:09	BAD	1143	BACKGROUND 6-G: (NANDAMPS)	-???.?
13:01:10	NORM	1143	BACKGROUND 6-G: (NANDAMPS)	- 20.0
13:29:10	BAD	1143	BACKGROUND 6-G: (NANDAMPS)	-???.?
13:30:10	NORM	1143	BACKGROUND 6-G: (NANDAMPS)	- 20.0
14:00:00	03/27/79			
14:02:01	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
14:02:31	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.4
14:16:59	CONT	2651	RB AIR CLG FAN AH-E-11E	NORM
14:25:10	BAD	1143	BACKGROUND 6-G: (NANDAMPS)	-???.?
14:26:10	NORM	1143	BACKGROUND 6-G: (NANDAMPS)	- 20.0
14:41:31	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
14:42:01	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.3
14:42:33	CONT	2738	D-G: ROOM AIR CPRSR DF-P-2A	NORM

W 23700

14:46:58	CONT	2738	D-G ROOM AIR CPRSR DF-P-2A	TRIP
14:57:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
14:58:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0

15:00:00 03/27/79

15:04:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
15:05:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
15:07:15	CONT	3251	CNDS PUMP CO-P-1C	ON
15:10:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
15:11:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
15:14:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
15:15:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
15:20:31	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
15:21:01	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.4
15:47:01	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
15:47:31	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.4
15:58:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
15:59:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
15:59:24	CONT	3251	CNDS PUMP CO-P-1C	OFF

16:00:01 03/27/79

16:04:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:06:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:08:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:09:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:11:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:12:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:14:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:19:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:20:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:21:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:27:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:28:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:32:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:33:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:53:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
16:53:41	CONT	2727	RB SUMP PUMP WDL-P-2B	ON
16:54:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
16:55:08	CONT	2727	RB SUMP PUMP WDL-P-2B	OFF
16:59:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?

17:00:00 03/27/79

17:00:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:01:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
17:02:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:04:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
17:06:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:07:45	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C	NORM
17:13:06	CONT	2740	D-G ROOM AIR CPRSR DF-P-2C	TRIP
17:20:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
17:22:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:26:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
17:28:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:35:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?
17:36:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
17:45:01	BAD	1021	RB AIR CLG COILS B EMER DISCH	-???.?
17:45:31	NORM	1021	RB AIR CLG COILS B EMER DISCH	66.3
17:58:10	BAD	1143	BACKGROUND 6-G: (NANOAMPS)	-???.?

W 23701

18:00:00 03/27/79

18:00:10	NORM	1143	BACKGROUND 6-G: (NANOAMPS)	- 20.0
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18:05:10	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
18:23:10	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
18:24:10	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
18:36:10	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
18:37:10	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
18:50:31	BAD	1021	RB AIR CLG COILS B EMER DISCH			-???.?
18:51:01	NORM	1021	RB AIR CLG COILS B EMER DISCH			66.3
18:54:10	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
18:55:10	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
18:57:10	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
18:58:10	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
18:58:18	NORM	0093	CNDS STOR TK 1A LEVEL			20.29

19:00:00 03/27/79

19:00:25	CONT	2967	RCP 1A OIL LIFT PMP DSCHG PRESS			NORM
19:00:25	CONT	2975	RCP 1A BACKSTOP OIL FLOW			NORM
19:00:28	CONT	2967	RCP 1A OIL LIFT PMP DSCHG PRESS			LOW
19:00:28	CONT	2967	RCP 1A OIL LIFT PMP DSCHG PRESS			NORM
19:00:49	CONT	2967	RCP 1A OIL LIFT PMP DSCHG PRESS			LOW
19:01:01	CONT	2975	RCP 1A BACKSTOP OIL FLOW			LOW
19:30:18	NORM	0094	CNDS STOR TK 1B LEVEL			20.29
19:38:00	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
19:39:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
19:40:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
19:41:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
19:50:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
19:51:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
19:54:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
19:55:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
19:58:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
19:59:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0

20:00:00 03/27/79

20:01:18	CONT	2738	D-G: ROOM AIR CPRSR DF-P-2A			NORM
20:05:53	CONT	2738	D-G: ROOM AIR CPRSR DF-P-2A			TRIP
20:11:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:11:09	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:15:09	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:26:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:28:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:29:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:31:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:32:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:40:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:40:29	BAD	1021	RB AIR CLG COILS B EMER DISCH			-???.?
20:40:59	NORM	1021	RB AIR CLG COILS B EMER DISCH			66.3
20:41:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:45:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:46:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
20:50:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
20:51:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0

21:00:00 03/27/79

21:06:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
21:07:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
21:09:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
21:10:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
21:12:08	BAD	1143	BACKGROUND	6-G:	(NANDAMPS)	-???.?
21:13:08	NORM	1143	BACKGROUND	6-G:	(NANDAMPS)	- 20.0
21:14:29	BAD	1021	RB AIR CLG COILS B EMER DISCH			-???.?
21:14:59	NORM	1021	RB AIR CLG COILS B EMER DISCH			66.3
21:17:41	CONT	2726	RB SUMP PUMP WDI-P-2A			ON
21:18:00	CONT	2726	RB SUMP PUMP WDI-P-2A			OFF

W 23702

21:21:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:25:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:26:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:28:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:28:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:29:03	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C			NORM
21:29:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:32:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:33:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:34:23	CONT	2740	D-G: ROOM AIR CPRSR DF-P-2C			TRIP
21:36:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:38:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:45:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:46:09	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:49:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:50:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
21:52:08	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
21:53:08	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0

22:00:00 03/27/79

22:00:09	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
22:01:09	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
22:08:00	BAD	1021	RB AIR CLG COILS B EMER DISCH			-???.?
22:08:30	NORM	1021	RB AIR CLG COILS B EMER DISCH			66.3
22:12:09	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
22:13:09	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
22:19:30	BAD	1021	RB AIR CLG COILS B EMER DISCH			-???.?
22:20:00	NORM	1021	RB AIR CLG COILS B EMER DISCH			66.3
22:25:09	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
22:26:09	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
22:54:10	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
22:55:10	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
22:59:10	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?

23:00:00 03/27/79

23:00:30	FLAG	3585	RC4A-TE3 INSTR CONDITION			BAI)
23:01:10	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0
23:02:10	BAD	1143	BACKGROUND	6-G:	(NANOAMPS)	-???.?
23:03:10	NORM	1143	BACKGROUND	6-G:	(NANOAMPS)	- 20.0

03/27/79

H 23703

1005 - 21048
28 May 28

Olsen CR says that RCDT panel

5070 16536

21606 22048

1. Charts for RCDT pump out to leakage cooler to RCDT Header

2. Control room log giving: RCDT seal leakage
RCDT level (45-47")

" temp

" pressure

leakage cooler outlet temp

RCDT leak rate

Charts called: leakage cooler flow to RCDT

W 23704

R. Harlin

8006

Communica.

Services

Read

6247

Charles Bullock

Penn-Lynn Photo

W 23705

1-18-80

I. PORV Responsibilities:

A. Obtain tailpipe information at low pressure steady state operation

B. Obtain picture of prg. area (Emov, codes, etc) to determine location of insulation

C. Determine whether or not a temp. profile was taken on TMI-2

D. Obtain data on TMI-2 temp profile & insulation location (X)

E. Look at temp. detectors inside containment around S/G shield wall (D-rings) and see if a representative temp. can be determined from the detector(s) for the prg. & assue. values

F. Data on RCDT level & pressure from day 1 (X)

W 23706

Atg. on PORV Investigation

L-18-80

1. containment air temp (explore heat transfer based on higher containm't temp.)
2. Jim Moore had someone li. at detectors & found none near by that would give meaning full data
3. Jim Moore also has info. on TMR-1 temp. profile
4. Rockline says that at 115°F, T/C would be reading ambient
containment air temp
- ** 5. Must know situation in insula.
6. need insula. on Unit 1
7. Area of window around prg. area



8. See Julio Abramovic (working with Jerry Untch) he plotted primary leak rate
9. Compare piping arrangement of Unit 1 & Unit 2
10. Stubbs has plot of RCS leakage get this
11. Surveillance Data level (Mass Addition to RCDT)
(a) when tank was pumped out in 1978
(b) work on leak rate cal. for bleed leak off in computer calculate.
12. Valve stem leak-off goes to RCDT
- * 13. what compensation should be made to RCDT temps/level
- * 14. identify valve stem leak-off

W 23707

363 Dubeil

~~tailpipe EMOV~~
Rocking: T/C in 19" line above inlet line of ~~main atm.~~ ^{code} safety
• valves see full temp & pressure of inlet line

1. get RCDT pump out for 78'

- 2. Ken Warren
- 3. call Putnam

W 23708

1-18-80

I. PORV Responsibilities:

A. Obtain tailpipe information at low pressure steady state operation

B. Obtain picture of prg. area (EMOV, codes, etc) to determine location of insulation

C. Determine whether or not a temp. profile was taken on TMI-2

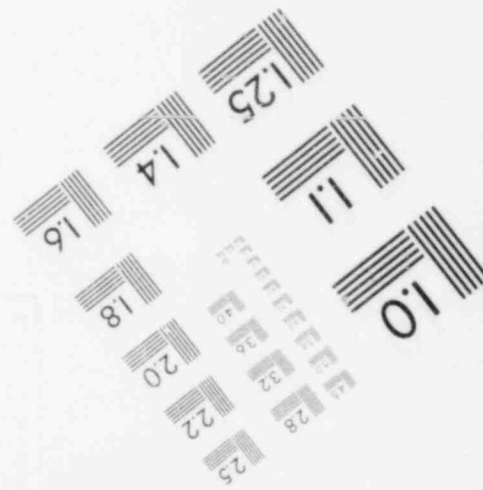
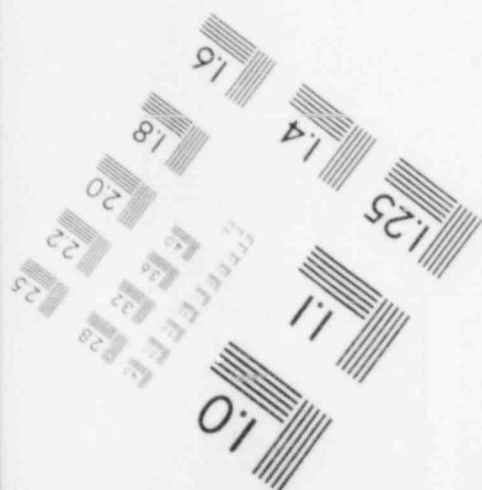
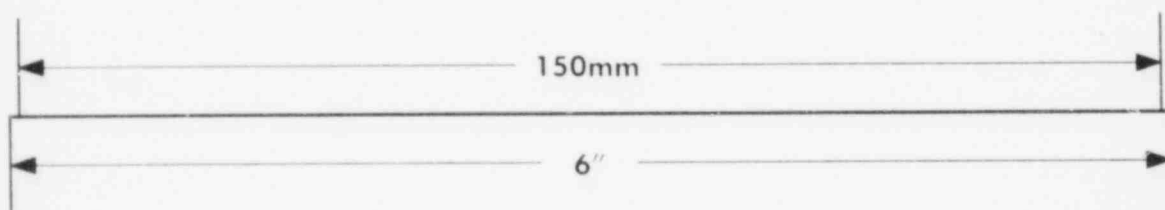
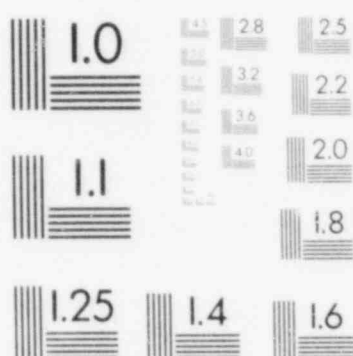
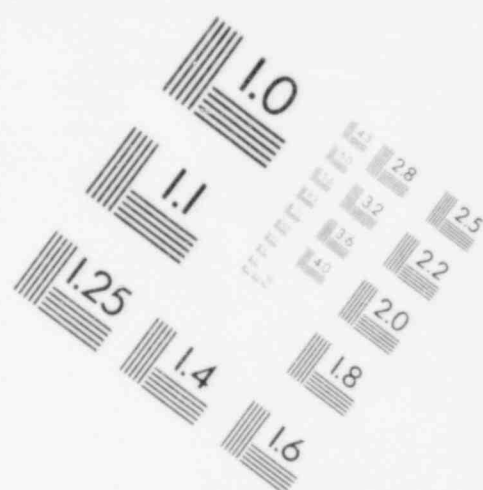
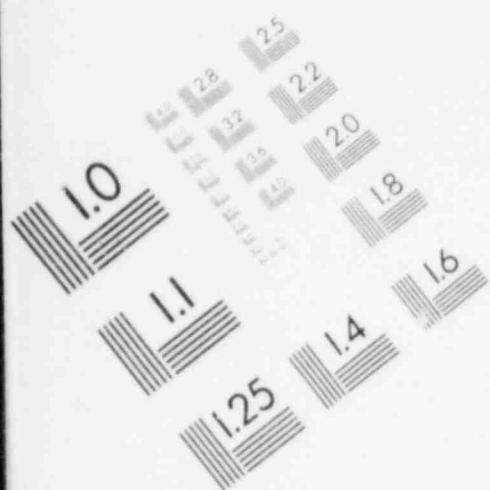
D. Obtain data on TMI-1 temp profile & insulation location (X)

E. Look at temp. detectors inside containment around S/G shield wall (D-rings) and see if a representative temp. can be determined from the detectors for the prg. & assoc. values

F. Data on RCDT level & pressure from day 1 (X)

W 23709

IMAGE EVALUATION
TEST TARGET (MT-3)



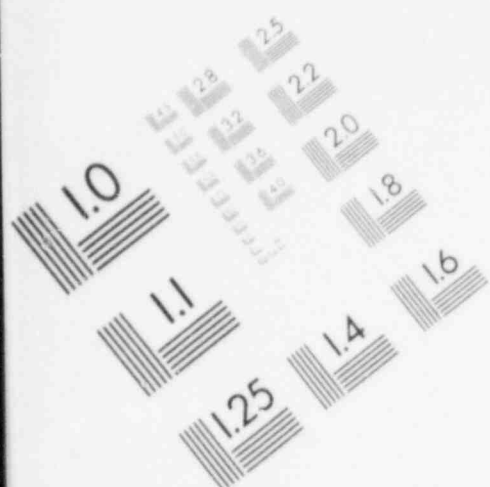
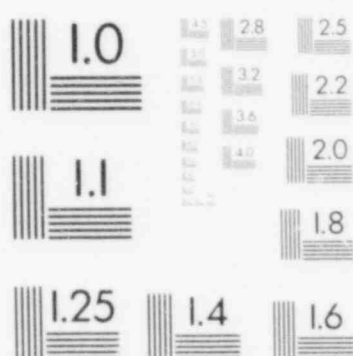
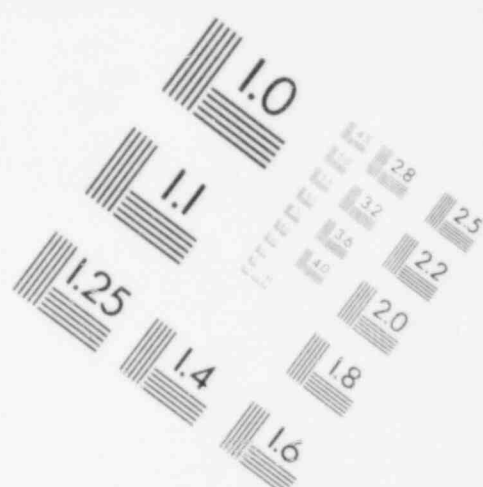


IMAGE EVALUATION
TEST TARGET (MT-3)



150mm

6"

L-17-80

1. PORV

Reelina

making for water
(a) J. Moore / J. Racine looking at piping arrangement around PORV
(b) Still says condensation won't support temp see saw

(i) PORV tailpipe reading subs at 170 (full temp, press)
(ii) plant at 265# line and 170 at lower
RES press have steady state condenser (lower press)
temp < 170°F

(a) pictures of press, relief valve area that shows insulation

(b) TMI-2 ever do temp profile at pressurizer and (top)

Paul Lear
Silt Stcher

(c) IC at Unit 1 data (temp profile & insula)

H 23710

④ If at temp detectors inside
containment around S/G shield
wall (D rings) would you
represent temp around pressurizer

⑤ det. on RDT level pressure
to determine rate of input to
Drum tank (go back to
day 1)

Tomorrow

W 23711

1-18-80

I. PORV Responsibilities:

A. Obtain tailpipe information at low pressure steady state operation

cm B. Obtain picture of prg area (Error, codes, etc) to determine location of insulation

C. Determine whether or not a temp-profile was taken on TMI-2

cm D. Obtain data on TMI-1 temp profile & insulation location (X)

E. Look at temp. detectors inside containment around S/G shield wall (O-rings) and see if a representative temp. can be determined from the detectors for the prg & assoc. values

F. Data on RCDT level & pressure from day 1 (X)

W 22712

PORV:

1.17.80

1. inlet side to code insulated (maybe)

a. Live Condon (TMI-CR) - no temp or press at all
have ~~temp~~ ^{RSD} Feb 78 → 3.3.78 (on island recorder)

- prior to accident only used
exact for transient - got traced
next day

- LR test period ^{Primary system leaks} ~~note~~ maybe
(later part of Feb 78)
at 10032 (RCOT temp)

- no strip chart for any of
(3) parameters

- have RCOT level when
did primary system leakage
test

Source
call ~~10-7-~~ Mar 28, 78 → 10.1.78

need plant status report also

10-10-78, 10-21, 22, 23, 24 of 78

11-5-78 have sent to island

call Am. Showlin: find out about insulation
on code: electro

W 23713

PORV

A. Stella says that conduction won't support the temps. we saw?

1. at electric tailpipe temp of 170°F Stella is saying that leakage not conduction would show this temp (170°F)

B. Jim Moore & J. Rachina looking at piping arrangement around PORV

1. PORV tailpipe reading at 170 (full power temp. & pressure)

C. STUBS with plant at 265 psi tailpipe reads 170°F . At lower PS pressure & have steady state condition (at low press. temp should be $< 170^{\circ}\text{F}$)

(1) if we find that at low press. temp. is $< 170^{\circ}\text{F}$ must get data.

D. Temp Profile:

1. need picture of prg. relief valve area that shows insulation
2. did TMI-2 ever do a temp. profile of prg. area (top of prg.)
3. look at Unit 1 data (temp. profile & insula.)
- 4.

- See Floyd or Siegelitz about insulation
- EC V3 Spray Valve: some insula. may have been smoked
- Check entrance room & see pictures

W 23715