

SHAW, PITTMAN, POTTS & TROWBRIDGE

1800 M STREET, N. W.

WASHINGTON, D. C. 20036

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STUART L. PITTMAN
GEORGE F. TROWBRIDGE
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R. TIMOTHY HANLON
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SHELDON J. WEISEL
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JAMES THOMAS LENHART

STEVEN L. MELTZER
DEAN D. AULICK
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RICHARD E. GALEN
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ALAN R. YUSPEH
JOHN L. CARR, JR.
PHILIP J. HARVEY
KAY L. RICHMAN
TIMOTHY B. MCBRIDE
CHARLES W. SURASKY*

(202) 331-4100

TELECOPIER

(202) 296-0694 & 296-1760

TELEX

89-2693 (SHAWLAW WSH)

CABLE "SHAWLAW"

JOHN H. SHARON

EDWARD B. CROSLAND

COUNSEL

*NOT ADMITTED IN D. C.

November 8, 1979

by 2/1/80
George Frampton, Esquire
NRC/TMI Special Inquiry Group
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear George:

I am enclosing in response to Mr. Walter Murfin's request of J. R. Gilbert copies of Instrument Calibration Data Sheets and Machine History Cards.

Sincerely,

Matias F. Travieso-Diaz

JEG:rt
Enclosures

8001210365
POOR ORIGINAL P

INST. CAL DATA SHEET

SYSTEM Secondary Plant
 LOCATION RBO RK 426
 TOLERANCE .050 VDC ENG. UNIT
 OR .25 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS 37 mV
 STATIC PRESSURE ERROR _____

INST. NO. SP-1A-LT1
 SERIAL NO. 721122
 MODEL OR TYPE BMC BY 8241X-A
 FUNCTION Full Range Stm Gen Level
 RANGE 641.20 To 63.14 "H₂O
 OUTPUT -10 To +10 VDC
 ACTION Transmitter

REFERENCE DATA Spec. 7 B&R Dwg 2005, 2083-1
BMC P/E E-21-17

SPECIAL DATA

Desired

CALIB.	Input "H ₂ O	Output VDC.	As Found	As Left	Error				
1	641.20	-10	-8.754	-10.003	.003				
2	525.59	-6	-4.772	-6.037	.037				
3	409.98	-2	-0.761	-2.035	.035				
4	294.36	+2	+3.267	+1.977	.023				
5	178.75	+6	+7.325	+6.015	.015				
6	63.14	+10	+11.271	+10.037	.037				

REMARKS:

High Side is Wet Reference Leg

TEST EQUIPMENT USED

EQUIP. Dry Gauge SER. NO. 3931 LAST CAL. 7/18/78 CAL. FREQ. 6 mo
 EQUIP. Fluke SER. NO. 530293 LAST CAL. 6/24/78 CAL. FREQ. 6 mo
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 11/8/78 INITIALS CMC
 PERFORMED BY Collipson DATE 11/8/78 APPROVED BY J. [Signature]

DC 1-1

POOR ORIGINAL

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A/LT1

Group 167

Component Name S.G. Full Range

Date

Remarks (History of Corrective Maintenance)

8-22-77

Calibrated as per surveillance procedure

10-1-77

Calibrated Transmitter due to bad reading as per operation. w found transmitter way out.

2/23/78

Calibrated FIP Surveillance Test 2302-R17

11/8/78

Calibrated. Came into Cal.

INST. NO. SP1A-LI1

SER. NO. 717145

SYSTEM Secondary Plant FUNCTION Stm. Gen. Level Full Range Loop "A"

LOCATION CT2 Con. 4 MOD OR TYPE BMC RY222XX

TOLERANCE 1.0 % OF SPAN SPECIAL DATA Dual Unit W/SP1B-LI1

Left Side Meter

-10 to +10 VDC

RANGE <u>0-60" X 10</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT	<u>B&R Dwg. 2381</u>
ACTION <u>Ind.</u>	<u>BMC P/I E12-9</u>

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	-10	600	596						
2	- 5	450	453						
3	0	300	296						
4	+ 5	150	147						
5	+10	0	3						

REMARKS _____

REVIEWED BY Q. C.	
<u>B. Harvey</u>	<u>9/27/76</u>
Q. C. ENGINEER	DATE

MAXIMUM ERROR IN PERCENT OF SPAN .666

TEST EQUIPMENT

PERFORMED BY R.L. Howard DATE 6/29/76
VH/EK

<u>BMC Test Unit E32</u>

REVIEWED BY E. Handell DATE 9-27-76
UE&C INST. SUP.

ACCEPTED BY J. Howard DATE 8-1-77
UE&C START-UP

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP1A-LI1

Group 167

Component Name S.G. FULL RANGE IND

Date

Remarks (History of Corrective Maintenance)

SYSTEM Secondary Plant
 LOCATION ABO - Rack 428
 TOLERANCE .050 MDC ENG. UNIT
.25 OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS .035
 STATIC PRESSURE ERROR _____

INST. NO. SP-1B-LT1
 SERIAL NO. 721128
 MODEL OR TYPE BMC BY 8241X-A
 FUNCTION Stm Gen Full Range Level
 RANGE 63.14" to 641.20" H₂O
 OUTPUT +10 to -10 VDC
 ACTION Trans.

REFERENCE DATA Spec. 7 B&R Dwg 2005, 2083-1
BMC P/E E-21-17

SPECIAL DATA

Desired

CALIB.	Input "H ₂ O	Output VDC	As Found	As Left	Error				
1	641.20	-10	-9.437	-10.035	.035				
2	525.59	-6	-5.423	-6.023	.023				
3	409.98	-2	-1.396	-2.002	.002				
4	294.36	+2	+2.614	+2.009	.009				
5	178.75	+6	+6.621	+6.014	.014				
6	63.14	+10	+10.613	+9.999	.001				

REMARKS:

High side is Reference Leg - Wet

TEST EQUIPMENT USED

EQUIP.	SER. NO.	LAST CAL.	CAL. FREQ.
<u>Digigauge</u>	<u>3931</u>	<u>7/18/78</u>	<u>6 m</u>
<u>Fluke</u>	<u>530293</u>	<u>6/24/78</u>	<u>6 m</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY:

DATE 11/8/78 INITIALS CMC

PERFORMED BY CMC/gmr

DATE 11/8/78 APPROVED BY [Signature]

DATE 11/12/78

SYSTEM Secondary Plant
 LOCATION A80 - Rack 428
 TOLERANCE .050 VDC ENG. UNIT
.25 OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS .035
 STATIC PRESSURE ERROR _____

INST. NO. SP-1B-LT1
 SERIAL NO. 721128
 MODEL OR TYPE BMC BY 8241X-A
 FUNCTION Stm Gen Full Range Level
 RANGE 63.14" To 641.20" H₂O
 OUTPUT +10 To -10 VDC.
 ACTION Trans.

REFERENCE DATA Spec. 7 - B&R Dwg 2005, 2083-1
BMC P/S E-21-17

SPECIAL DATA

Desired

CALIB.	Input "H ₂ O	Output VDC.	As Found	As Left	Error				
1	641.20	-10	-9.437	-10.035	.035				
2	525.59	-6	-5.423	-6.023	.023				
3	409.30	-2	-1.396	-2.002	.002				
4	294.36	+2	+2.614	+2.009	.009				
5	178.75	+6	+6.621	+6.014	.014				
6	63.14	+10	+10.613	+9.999	.001				

REMARKS:

High side is Reference Leg - Wet

TEST EQUIPMENT USED

EQUIP.	SER. NO.	LAST CAL.	CAL. FREQ.
<u>Digigauge</u>	<u>3931</u>	<u>7/18/78</u>	<u>6 mo</u>
<u>Fluke</u>	<u>530293</u>	<u>6/24/78</u>	<u>6 mo</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

CHINERY HISTORY ENTRY: DATE 11/8/78 INITIALS CSW
 PERFORMED BY CMW DATE 11/8/78 APPROVED BY [Signature] DATE 11/12/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1B-LT1

Group 167

Component Name Fall
Oper. RANGE TRAN

Date

Remarks (History of Corrective Maintenance)

9/29/77 Cal unit and filled reference
leg. (was on ground was 5.0 mV)
at 17.36 VDC
Ref leg was about 1/2 full

10/2/77 RECALIBRATED FOR OPERATIONS. TJW

2/20/78 Calibrated as per Serv. 2302-R17

10/31/78 Calibrated X-mitter (Dis Serv 2302-R17 found Xmitter out of

4/8/78 Calibrated XMT

INST. NO. SP1B-LI-1

SER. NO. 717145

SYSTEM Secondary Plant FUNCTION Stm. Gen. Level Full Range Loop "E"

LOCATION CT2 Con. 4 MOD OR TYPE BMC RY222XX

TOLERANCE 1.0 % OF SPAN SPECIAL DATA Dual Unit W/SP1A-LI1

Right Side Meter

-10 to +10 VDC

RANGE <u>0-60" X 10</u>	REFERENCE DATA <u>Spec. # 7</u>
OUTPUT	<u>B&R Dwg. 2381</u>
ACTION <u>Ind.</u>	<u>BMC P/I E12-9</u>

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	-10	600	600						
2	-5	450	450						
3	0	300	300						
4	+5	150	150						
5	+10	0	0						

REMARKS _____

REVIEWED BY O. C.
S. Harvey 9/27/76
O. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

TEST EQUIPMENT

PERFORMED BY R.L. Howell DATE 6/29/76
VH/EK

BMC Test Unit E32

REVIEWED BY E. Scudell DATE 9-27-76
UE&C INST. SUP.

ACCEPTED BY W. Mark DATE 8-1-77
UE&C START-UP

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP1B-LI1

Group 167

Component Name OPER. RANGE IND.

Date

Remarks (History of Corrective Maintenance)

SYSTEM SECONDARY PLANT
 LOCATION R.B.O. TEST RACK 426
 TOLERANCE ± 50MA ENG. UNIT
 OR .25 % OF SPAN
 MAX. ERROR OF % OF SPAN .12
 OR
 MAX. ERROR ENG. UNITS .030
 STATIC PRESSURE ERROR _____

INST. NO. SP-1A-LT2
 SERIAL NO. 722378
 MODEL OR TYPE BMC BY 8B41K-A
 FUNCTION OPER. STM. GEN. LEVEL
 RANGE 292.86 to 1.35" H₂O
 OUTPUT -10 to +10VDC
 ACTION TRANS.

REFERENCE DATA: SPEC. 7 B & R. DWG. 2005, 2083-2 BMC PIZ E21-17-2

SPECIAL DATA

CALIB.	INPUT "H ₂ O	DESIRED OUTPUT VDC	AS FOUND VDC	AS LEFT VDC	ERROR				
1	292.86	-10.000	-10.020	-10.008	.008				
2	234.55	-6.000	-6.017	-6.009	.009				
3	176.26	-2.000	-2.012	-1.995	.005				
4	117.95	+2.000	+1.988	+2.019	.019				
5	59.65	+6.000	+5.999	+6.030	.030				
6	1.35	+10.000	+9.966	+10.039	.029				

REMARKS: 0VDC @ 147.10" H₂O

TEST EQUIPMENT USED

EQUIP. FLUKE DVM 8600A SER. NO. 530293 LAST CAL. 6/24/78 CAL. FREQ. 6 MOS
 EQUIP. DIGI GAUGE 0-1000" SER. NO. 3931 LAST CAL. 7/7/78 CAL. FREQ. 6 MOS
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

INNER HISTORY ENTRY: DATE 11-7-78 INITIALS MS
 PERFORMED BY Wynn/Somo DATE 11-7-78 APPROVED BY [Signature] DATE 12/1/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit TI

Component # SP-1A-LT2

Group 1167

Component Name OPER. RANGE TRAN

Date

Remarks (History of Corrective Maintenance)

3-25-78 Calibrated for Surveillance Test 2302-R17

11-7-78 Calibrated found out of spec. corrected with surgery,
zero adjust. unit also adjusted oscillator.

INST. NO. SP1A-LAM1

SER. NO. None

SYSTEM Secondary Plant FUNCTION Stm. Gen. Oper. Level Comp.

LOCATION Cbl. Rm. (5-4-1) MOD OR TYPE BMC 6618210-1

TOLERANCE .5 % OF SPAN

SPECIAL DATA _____

RANGE <u>20 VDC</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>+10 VDC</u>	BMC Inst. <u>E92-12</u>
ACTION <u>Multiplier</u>	" Dwg. <u>D-8038495</u>

CALIB.	E1	E2	Gain	Reg	Meas	Error			
	Input Pin 11	Input Volts		Output Volts	Output Volts				
1	+4.00	-10.00	.97	+ 3.58	+ 3.574	.004			
2	+4.00	+10.00	1.43	+10.02	+10.004	.016			
3	-4.00	-10.00	.97	- 4.18	-4.180	.010			
4	-4.00	+10.00	1.43	- 1.42	-1.432	.012			
5									

REMARKS E2 Input Volts Gain
-10.00 0.97
+10.00 1.43

REVIEWED BY Q.C.	
<u>WJ Schell</u>	<u>7-7-76</u>
Q.C. ENGINEER	DATE
NOT IN Q.C. SCOPE	

MAXIMUM ERROR IN PERCENT OF SPAN .08

TEST EQUIPMENT

PERFORMED BY EK DATE 12/8/75

REVIEWED BY E. Samuels DATE 7-16-76

UE&C INST. SUP.

ACCEPTED BY J. Mark DATE 8-1-77

UE&C START-UP

BMC E32 & Adj. Sig. Gen. 6614540-3
Fluke 3560
Fluke 4412
Variac

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP1A-LAM1

Group 167

Component Name S.G. Oper Summer

Date

Remarks (History of Corrective Maintenance)

SYSTEM UNE STEEL PLANT
 LOCATION CABLE ROOM (5-7-4)
 TOLERANCE 10 mV ENG. UNIT OR
.05 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. SP1A - 4411
 SERIAL NO. _____
 MODEL OR TYPE BMC 6614540-1
 FUNCTION S.G. LPLC CAL COMP
 RANGE 20VDC
 OUTPUT 0 TO -20VDC
 ACTION DC SIGNAL GENERATOR

REFERENCE DATA SPEC 7
BMC INST. E92-1-1
BMC DWG D-8038495C

SPECIAL DATA UNE MODULE CAL. SHEETS

CALIB.	DESIRED OUTPUT VOLTS	AS FOUND OUTPUT VOLTS	AS LEFT OUTPUT VOLTS						
1	-10.00	-10.00	-10.00						
2									
3									
4									
5									
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP. WESTON 4444 SER. NO. 202191 LAST CAL. 12/77 CAL. FREQ. 6/
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

PROPERTY HISTORY ENTRY: DATE 4/11/78 INITIALS ALC
 PERFORMED BY ALC DATE 4/12/78 APPROVED BY [Signature] DATE 4/12/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SPIA-LAM1

Group 167

Component Name S.G. Op. Level Comp

Date

Remarks (History of Corrective Maintenance)

4/10/70

RECALIBRATED

INST. CAL. DATA SHEET

SYSTEM WATER TREATMENT
LOCATION WATER TREAT PLANT
TOLERANCE ±0.01 ENG. UNIT OR % OF SPAN
MAX. ERROR OF % OF SPAN _____
OR
MAX. ERROR ENG. UNITS _____
STATIC PRESSURE ERROR _____

INST. NO. 5814-1000
SERIAL NO. _____
MODEL OR TYPE PHO 2011A-1
FUNCTION PHO 2011A-1 COMP
RANGE 0-1000
OUTPUT 4-20mA
ACTION STATIC FUNCTION CHECK

REFERENCE DATA: SPEC. 7
WATER TREAT PLANT
PHO 2011A-1 COMP

SPECIAL DATA

CALIB.		100%	75%	50%	25%				
1	START	41.00	30.75	19.50	10.25				
2	STOP	41.00	30.75	19.50	10.25				
3	START	41.00	30.75	19.50	10.25				
4	STOP	41.00	30.75	19.50	10.25				
5	START	41.00	30.75	19.50	10.25				
6	STOP	41.00	30.75	19.50	10.25				

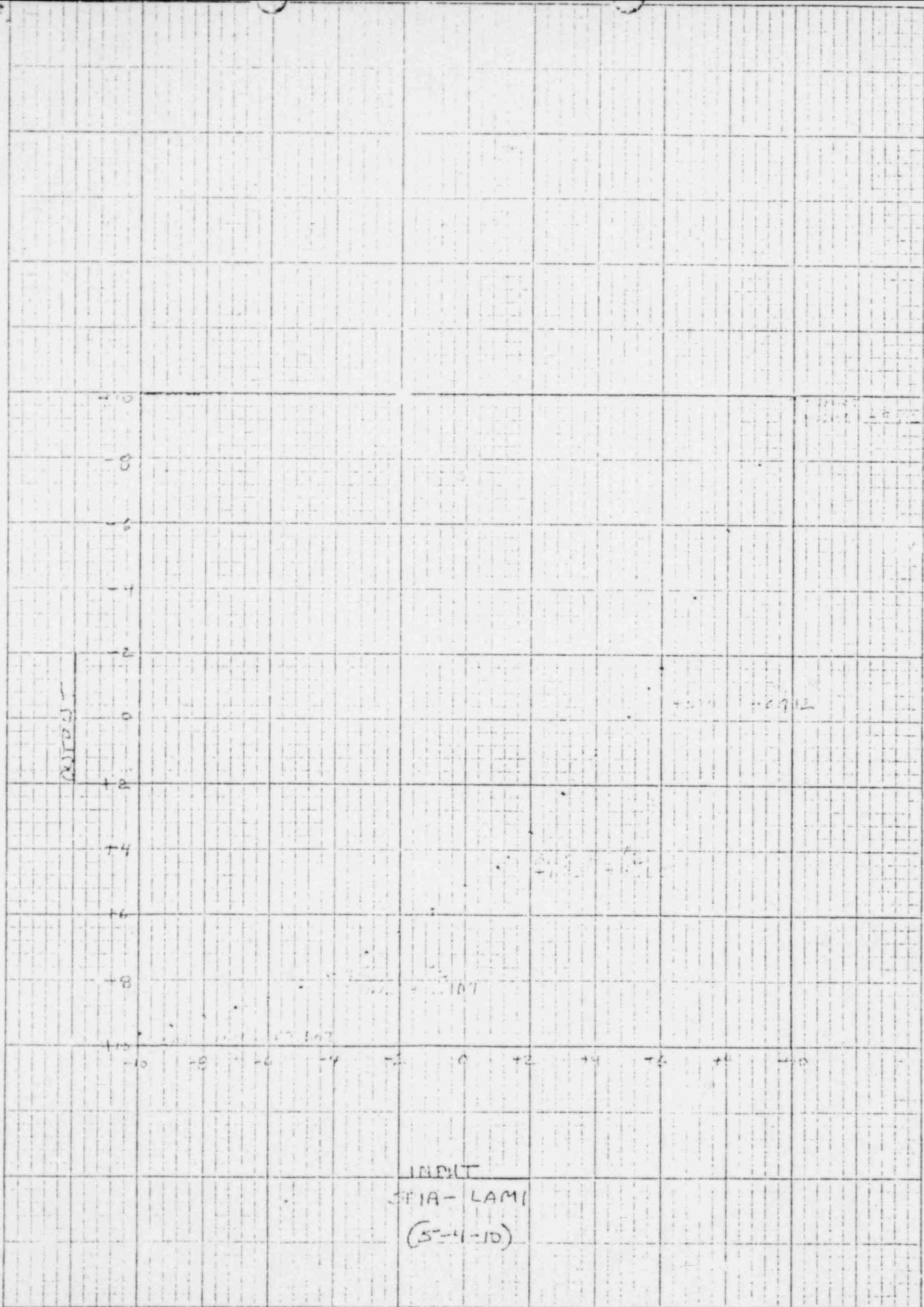
REMARKS:

TEST EQUIPMENT USED

EQUIP. WATER TREAT PLANT SER. NO. 200101 LAST CAL. 1/77 CAL. FREQ. 1
EQUIP. WATER TREAT PLANT SER. NO. 12-1 LAST CAL. 12A CAL. FREQ. 1
EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

WINERY HISTORY ENTRY: DATE 9-11-78 INITIALS [Signature]
PERFORMED BY [Signature] DATE 9-11-78 APPROVED BY [Signature] DATE 9/11/78

Model 10 X 10 TO THE INCH 46 0780
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.



INPUT
SFIA - LAM1
(5-4-10)

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SPIA-LAMI

Group 167

Component Name S.G.op. Level Comp

Date

Remarks (History of Corrective Maintenance)

4/1/79

RECALIBRATED

INST. NO. SP-1A-LR/SP-1A-LS1

SER. NO. None

SYSTEM Secondary Plant FUNCTION Stm. Gen. Level "A" Operate

LOCATION CT2 Con. 4 MOD OR TYPE BMC WR21A11K-3

TOLERANCE .5 % OF SPAN SPECIAL DATA Chart SA-100

0-100%

RANGE	<u>+10 VDC</u>	REFERENCE DATA	<u>Spec. 7</u>
OUTPUT			<u>B&R Dwg. 2381</u>
ACTION	<u>Recorder W/AH</u>		<u>BMC P/I E12-92</u>

CALIB.	Input VDC	Desired %	Actual %						
1	-10	0	0						
2	-5	25	25						
3	0	50	50						
4	+5	75	75						
5	+10	100	100						

REMARKS Hi Alarm Set at 82.5% Reset 80.5%

REVIEWED BY Q. C.
K. Harvey 9/27/76
Q. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

PERFORMED BY [Signature] VH/GH DATE 7/6/76

REVIEWED BY [Signature] DATE 9-27-76
UE&C INST. SUP.

ACCEPTED BY [Signature] DATE 9-1-77
UE&C START-UP

TEST EQUIPMENT

Weston 202191
Lambda
Simpson E28

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LR/LS1

Group 167

Component Name STM GEN Level A REC

Date

Remarks (History of Corrective Maintenance)

10/14/77 Cal Recorder per STE'S request

02-28-78 CAL OK OK WU

1/14/79 Cal OK OK WU

SYSTEM SECONDARY PLANT
 LOCATION RB.O RK-426
 TOLERANCE ± 50mA ENG. UNIT GR
.25 % OF SPAN
 MAX. ERROR OF % OF SPAN .084
 OR
 MAX. ERROR ENG. UNITS .021
 STATIC PRESSURE ERROR _____

INST. NO. SP-1A-LT3
 SERIAL NO. 722377
 MODEL OR TYPE BMC BY8B4IX-A
 FUNCTION OPERATE STEAM GENERATOR LE
 RANGE 292.86 "H₂O - 1.35 "H₂O
 OUTPUT -10VDC to +10VDC
 ACTION LEVEL TRANSMITTER

REFERENCE DATA SPEC. 7 B&R DWG. # 2005, 2083-2
BMC P/I E 21-17-2

SPECIAL DATA

CALIB.	INPUT "H ₂ O	DESIRED OUTPUT VDC	AS FOUND VDC	AS LEFT VDC	ERROR				
1	292.86	-10.000	-9.951	-10.002	.002				
2	234.50	-6.000	-5.957	-6.019	.019				
3	176.26	-2.000	-1.951	-2.019	.019				
4	117.95	+2.000	+2.060	+1.979	.021				
5	59.65	+6.000	+6.069	+5.992	.008				
6	1.35	+10.000	+10.065	+9.993	.007				

REMARKS: 0VDC = 147.10 "H₂O

TEST EQUIPMENT USED

EQUIP. FLUKE DVM 8600A SER. NO. 530293 LAST CAL. 6/24/78 CAL. FREQ. BMC
 EQUIP. DIGI GAUGE 0-1000" SER. NO. 3931 LAST CAL. 7/17/78 CAL. FREQ. GM
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MINISTRY HISTORY ENTRY: DATE 11-7-78 INITIALS MS
 PERFORMED BY Jones/Roch DATE 11-7-78 APPROVED BY [Signature] DATE 11/7/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LT3

Group 167

Component Name OPER. STIM GEN LEV.

Date

Remarks (History of Corrective Maintenance)

2-23-78 Calibrated because of finding the output voltage at +16.75 VDC with no input as per surveillance procedure 2300-R17

11-7-79 Calibrated found out of spec. corrected with range and zero adjustment - oscillator also set at 17.25V

SYSTEM Secondary Plant
 LOCATION RBO - Rock 428
 TOLERANCE .25 ENG. UNIT OR % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 MAX. ERROR ENG. UNITS .37
 STATIC PRESSURE ERROR _____

INST. NO. SF-1B-LT2
 SERIAL NO. 722376
 MODEL OR TYPE BMC BY 8B41X-A
 FUNCTION Operating STM Gen Level
 RANGE 292.86 To 1.35 in H₂O
 OUTPUT -10 to +10 VDC
 ACTION Transmitter

REFERENCE DATA

B&R Dwg. 2005 Spec 7 BMC P/E 21-17-2

SPECIAL DATA

Desired

CALIB.	Input " H ₂ O	Output VDC	As Found	As Left	Error				
1	292.86	-10.000	-10.122	-10.037	.037				
2	234.55	-6.000	-6.077	-6.021	.021				
3	176.26	-2.000	-2.086	-2.016	.016				
4	117.95	+2.000	+1.926	+2.000	0				
5	59.65	+6.000	+5.926	+6.014	.014				
6	1.35	+10.000	+9.910	+9.978	.022				

REMARKS:

High side is Reference Wet Leg

TEST EQUIPMENT USED

EQUIP. Digigauge SER. NO. 3931 LAST CAL. 2/8/78 CAL. FREQ. 6
 EQUIP. Fluke SER. NO. 530306 LAST CAL. 10/23/78 CAL. FREQ. 6
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY

DATE 11/7/78 INITIALS CUW

PERFORMED BY CUW DATE 11/7/78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1B-LTZ

Group 167

Component Name OPER. SIM GEN D/P TRAN

Date

Remarks (History of Corrective Maintenance)

2/26/78	Calibrated as per surveillance procedure 2302-R17
11/7/78	Calibrated. Came into calibration
12/3/78	Revised source code by power calibration, rechecked & recalibrated

INST. NO. SP-1B-LR/SP-1B-LS1

SER. NO. None

SYSTEM Secondary Plant

FUNCTION Stm. Gen. Level "B" Operate

LOCATION CT2 Con. 4

MOD OR TYPE BMC WR21A11X-3

TOLERANCE .5 % OF SPAN

SPECIAL DATA Chart SA-100

0-100%

RANGE <u>+/-10 VDC</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT	<u>E&R Dwg. 2381</u>
ACTION <u>Recorder W/AH</u>	<u>BMC P/I E12-92</u>

CALIB.	Input VDC	Desired %	Actual %						
1	-10	0	0						
2	-5	25	25						
3	0	50	50						
4	+5	75	75						
5	+10	100	100						

REMARKS Hi Alarm Set At 82.5% Reset 81.5%

REVIEWED BY G. C.
K. Harvey 9/27/76
G. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

PERFORMED BY VH/GH DATE 7/6/76

REVIEWED BY E. S. Hill DATE 9-17-76
UE&C INST. SUP.

ACCEPTED BY G. C. [Signature] DATE 8-1-77
UE&C START-UP

TEST EQUIPMENT.

Weston 202191
Lambda
Simpson #28

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1B LR/LS1

Group 167

Component Name S.G. Oper Recorder

Date

Remarks (History of Corrective Maintenance)

8/30/77 Cal Recorder Las 0-100%
 -10 VDC = 0% +10 VDC = 100%
 41 Alarm 82.5% Reset 81.5%
 D. Kinter

10-27-78 cal ck ok ~~ll~~

1/10/79 cal ck ok ~~ll~~

INST. CAL. DATA SHEET

SYSTEM Secondary Plant
 LOCATION RBO R.Y 428
 TOLERANCE .050 VDC ENG. UNIT OR
.25 % OF SPAN
 MAX. ERROR OF % OF SPAN -
 MAX. ERROR ^{OR} ENG. UNITS 4
 STATIC PRESSURE ERROR -

INST. NO. SP-13-LT3
 SERIAL NO. 722388
 MODEL OR TYPE BMC BY 8B41X-A
 FUNCTION Operating Steam Gen Level
 RANGE 1.35" To 292.86" H₂O
 OUTPUT -10 v To +10 VDC
 ACTION Transmitter

REFERENCE DATA Spec 7, B+R Dwg. 2005 BMC P/I E21-17-2
Proc 1430-417

SPECIAL DATA

Desired

CALIB.	Input " H ₂ O	Desired VDC	As Found	As Left	Error				
1	292.86	-10	-10.047	-10.047	.047				
2	234.55	-6	-6.029	-6.029	.029				
3	176.26	-2	-2.034	-2.034	.034				
4	117.95	+2	+1.970	+1.970	.030				
5	59.65	+6	+5.979	+5.979	.021				
6	1.35	+10	+9.967	+9.967	.033				

REMARKS:

TEST EQUIPMENT USED

EQUIP. Digigauge SER. NO. 39.31 LAST CAL. 7/13/78 CAL. FREQ. 6m.
 EQUIP. Fluke SER. NO. 5.30 293 LAST CAL. 6/24/78 CAL. FREQ. 6m.
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 11/8/78 INITIALS CSW
 PERFORMED BY Callaghan DATE 11/8/78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1B-LT3

Group 167

Component Name Stm Gen Lev. TRAN

Date

Remarks (History of Corrective Maintenance)

10/3/77	CALIBRATED FOR STARTUP REW
2/26/78	Calibrated as per surveillance Procedure 2302-R17
7-29-78	Calibrated as 1490-V17 procedure and fill high side leg with water. TRS/ROCK
11/3/78	Checked Cal. Was in spec.

SYSTEM Secondary Plant
 LOCATION RBO RK 426
 TOLERANCE .050 VDC ENG. UNIT OR
.25 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. SP-1A-LT4
 SERIAL NO. 722373
 MODEL OR TYPE BMC BY8B41X-A
 FUNCTION Startup Str. Gen. Level
 RANGE 136.58 To 386.58 "H₂O
 OUTPUT -10 VDC To +10 VDC
 ACTION Transmitter

REFERENCE DATA Spec. 7 B&R Dwg. 2005, 2083-2
BMC P/E E 21-17-2

SPECIAL DATA

Desired

CALIB.	Input "H ₂ O	Output VDC	As Found	As Left	Error				
1	386.58	-10	-10.196	-10.024	.024				
2	336.58	-6	-6.196	-6.022	.022				
3	286.58	-2	-2.167	-2.012	.012				
4	236.58	+2	+1.857	+2.002	.002				
5	186.58	+6	+5.887	+6.015	.015				
6	136.58	+10	+9.910	+10.017	.017				

REMARKS:

High side is wet reference leg

TEST EQUIPMENT USED

EQUIP. Aircraft Digigauge SER. NO. 3931 LAST CAL. 7/15/78 CAL. FREQ. 6 mo
 EQUIP. Fluke SER. NO. 530293 LAST CAL. 6/24/78 CAL. FREQ. 6 mo
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY

DATE 11/9/78 INITIALS CSW

PERFORMED BY Colligan DATE 11/9/78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LTY

Group 167

Component Name S.G. S.O Level TRAN

Date

Remarks (History of Corrective Maintenance)

4-22-77 Calibrated as per surveillance procedure
2-25-78 Calibrate as per surveillance Test 2302-R17
11/9/78 Calibrated; came into spec.

SYSTEM Secondary Plant
 LOCATION RBO RK-426
 TOLERANCE .050 VDC ENG. UNIT
.25 OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN —
 OR
 MAX. ERROR ENG. UNITS 50.000
 STATIC PRESSURE ERROR —

INST. NO. SP1A-LT5
 SERIAL NO. 721204
 MODEL OR TYPE BMC BY 8841X-A
 FUNCTION Startup STM. Gen. Level
 RANGE 136.58 To 386.58 "H₂O
 OUTPUT -10 VDC To +10 VDC
 ACTION Transmitter

REFERENCE DATA Spec. 7 B4R Dwg 2005; 2083-2
BMC P/I E.21-17-2

SPECIAL DATA

Desired

CALIB.	Input "H ₂ O	Output VDC	As Found	As Left	Error				
1	386.58	-10	-10.028	-10.008	.008				
2	336.58	-6	-6.028	-6.020	.020				
3	286.58	-2	-2.007	-2.020	.020				
4	236.58	+2	+2.013	+1.995	.005				
5	186.58	+6	+6.040	+5.998	.002				
6	136.58	+10	+10.069	+10.015	.015				

REMARKS: High side is wet reference leg.

TEST EQUIPMENT USED

EQUIP. Ashcroft Digigauge SER. NO. 3931 LAST CAL. 7/15/78 CAL. FREQ. 6 mo
 EQUIP. Fluke SER. NO. 530293 LAST CAL. 6/24/78 CAL. FREQ. 6 mo
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 11/9/78 INITIALS ewc

PERFORMED BY Collyer DATE 11/9/78 APPROVED BY [Signature] 12/10/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LTS

Group 167

Component Name S.G. SU. TRAN

Date

Remarks (History of Corrective Maintenance)

8-7-77 calibrated as per surveillance procedure

2-24-79 Calibrat-1 as per surveillance Test 2302-R17

11/9/78 Calibrated, came into spec.

INST. NO. SP-1A-LI2

SER. NO. 717142

SYSTEM Secondary Plant FUNCTION Stm. Gen. Level Startup Loop "A"

LOCATION CT2 Con. 4 MOD OR TYPE BMC RY 222XX

TOLERANCE 1.0 % OF SPAN SPECIAL DATA Dual Unit W/SP1B-LI2

-10 to + 10 VDC

RANGE <u>0-25" X 10</u>	REFERENCE DATA <u>Spec. # 7</u>
OUTPUT	<u>E&R Dwg. 2381</u>
ACTION <u>Ind.</u>	<u>BMC P/I E12-9</u>

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	-10	0	0						
2	-5	62.5	62.5						
3	0	125	125						
4	+5	177.5	177.5						
5	+10	250	250						

REMARKS _____

REVIEWED BY Q. C.
K. Harvey 9/27/75
Q. C. ENGINEER

MAXIMUM ERROR IN PERCENT OF SPAN 0

PERFORMED BY *R. J. ...* DATE 6/29/76

REVIEWED BY *E. ...* DATE 9-27-76
U&C INST. SUP.

ACCEPTED BY *J. ...* DATE 8-1-77
U&C START-UP

TEST EQUIPMENT

BMC Test Unit E32

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LI2

Group 167

Component Name S.G. Level IND

Date

Remarks (History of Corrective Maintenance)

SYSTEM NJI SECONDARY PLANT

INST. NO. SP1A-413

LOCATION CABLE ROOM (5-4-13)

SERIAL NO. _____

ORANGE 2.5" ENG. UNIT OR 1 % OF SPAN

MODEL OR TYPE BMC 6625518-1

MAX. ERROR OF % OF SPAN _____

FUNCTION STM GEN A STARTUP LEE

MAX. ERROR ENG. UNITS _____

RANGE ± 10VDC

STATIC PRESSURE ERROR _____

OUTPUT 0-35" x 10

ACTION PM IND.

REFERENCE DATA

SPEC 7
BMC INST. E12-1-1
BMC DWG 08038495C

SPECIAL DATA

CALIB.	INPUT VDC	DESIRED OUTPUT	AS FOUND	AS LEFT						
1	-10.0	0	2.5	0						
2	-6.0	50	52.0	50						
3	-2.0	100	102	101						
4	+2.0	150	151	150						
5	+6.0	200	200	200						
6	+10.0	250	248	250						

REMARKS:

TEST EQUIPMENT USED

EQUIP. <u>DIGITEC 3110</u>	SER. NO. <u>61260567</u>	LAST CAL. <u>1/78</u>	CAL. FREQ. <u>7/</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY

DATE 4/13/78

INITIALS JAR

PERFORMED BY J.P. Rice

DATE 4/13/78

APPROVED BY [Signature]

DATE 4/13/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-1A-LI3

Group 167

Component Name S.G. SU TUP.

Date

Remarks (History of Corrective Maintenance)

4/13/78

CALIBRATED

SYSTEM Supervisory Panel
 FUNCTION Control Panel Panel Pack 04
 TOLERANCE 0.5 ENG. UNIT OR
1.0 % OF SPAN
 MAX. ERROR OF % OF SPAN 1.0
 OR
 MAX. ERROR ENG. UNITS 0.5
 STATIC PRESSURE ERROR -

INST. NO. CP-1A-114
 SERIAL NO. _____
 MODEL OR TYPE TYPE ES 170
 FUNCTION STAN GEN SU LV 17
 RANGE +10 VOL / 0.25 X 10⁴ WTR.
 OUTPUT -
 ACTION INDICATION LEVEL

REFERENCE DATA SAC 7

SPECIAL DATA FOR 43 & FC 50

CALIB.	INPUT VOLTS	DESIRABLE IND. X 10	NOMINAL IND. X 10	1% MAX IND. X 10	ERROR
1	-10	0	5	.25	.25
2	-5	6.25	6.5	6.40	.15
3	0	12.50	12.55	12.50	0
4	+5	18.75	19.0	18.75	0
5	+10	25.0	25.0	25.0	0
6					

REMARKS:

TEST EQUIPMENT USED

EQUIP. TRANSMITTER SER. NO. 1040 LAST CAL. 15-29-78 CAL. FREQ. 6
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 1-19-79 INITIALS REP
 PERFORMED BY P. E. PRANU JR DATE 1-19-79 APPROVED BY [Signature] DATE 2/2/79

MACHINERY HISTORY CARD (16C/MCC/ELEC)

Unit II

Component # SP-1A214

Group 167

Component Name S.G. SU LVLA

Date

Remarks (History of Corrective Maintenance)

11/11/79 Reformed calibration on level indicator following storm surge. Level on meter is stably observed Dec to 11/27, however more work is. P.C.

SYSTEM Secondary Plant
 LOCATION CTR Console 4
 TOLERANCE 12 psig ENG. UNIT OR
1 % OF SPAN
 MAX. ERROR OF % OF SPAN 0
 OR
 MAX. ERROR ENG. UNITS 0
 STATIC PRESSURE ERROR N/A

INST. NO. SP-6A-PI-1
 SERIAL NO. 724974
 MODEL OR TYPE BMC RY211XX
 FUNCTION 5/6 press loop A
 RANGE 0-1200 psig
 OUTPUT N/A
 ACTION Ind.

REFERENCE DATA Spec. 7
B+R Dwg 2381
BMC P/I E-R-9

SPECIAL DATA Dual unit w/ SP-6B-PI-1

CALIB.	Input VDC	Desired Ind psig	AS Found psig	AS Left psig					
1	2.5	0	20	0					
2	5.0	300	290	300					
3	7.5	600	590	600					
4	10.0	900	890	900					
5	12.5	1200	1190	1200					
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP. Data Precision DUM SER. NO. 4857 LAST CAL. 5/9/78 CAL. FREQ. 1yr
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 9/9/78 INITIALS RRR
 PERFORMED BY Rupert DATE 9/9/78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SPGA-PI1

Group 167

Component Name _____

Date

Remarks (History of Corrective Maintenance)

6/10/78 RECALIBRATED INDICATOR ALONG WITH SPER-PI1 - *Red*
9/9/78 Calibrated per W.P. 4821, RRR

SYSTEM NNI (SECONDARY PLANT)

INST. NO. SP6A-P12

LOCATION CABLE ROOM (4-6-10)

SERIAL NO. _____

TOLERANCE 12 PSIG ENG. UNIT _____

MODEL OR TYPE BMC 6623518-1

MAX. ERROR OF % OF SPAN _____

FUNCTION STRIPPED OUT PRESS LOG

MAX. ERROR ENG. UNITS _____

RANGE +2.5 TO 12.5 VDC

STATIC PRESSURE ERROR _____

OUTPUT 0-12 PSIG X 100

REFERENCE DATA

SPEC 7
BMC INST. E12-1-1
BMC DWG D8038499C

SPECIAL DATA

CALIB.	INPUT VDC	DESIRED OUTPUT	AS FOUND	AS LEFT					
1	+2.50	0	200	0					
2	+4.50	240	260	240					
3	+6.50	480	490	480					
4	+8.50	720	730	720					
5	+10.50	960	960	960					
6	+12.50	1200	1200	1200					

REMARKS:

TEST EQUIPMENT USED

EQUIP.	SER. NO.	LAST CAL.	CAL. FREQ.
<u>DIGITEC 310</u>	<u>61260567</u>	<u>1/78</u>	<u>7/</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

MACHINERY HISTORY ENTRY:

DATE 13 APR 78 INITIALS [Signature]

PERFORMED BY [Signature]

DATE 13 APR 78 APPROVED BY [Signature]

DATE 1/

SYSTEM SEWAGE Plant
 LOCATION CADY
 TOLERANCE 1.0 ENG. UNIT OR % OF SPAN
 MAX. ERROR OF % OF SPAN 0
 MAX. ERROR ENG. UNITS —
 STATIC PRESSURE ERROR —

INST. NO. SP-6A-P13
 SERIAL NO. NA
 MODEL OR TYPE ES-360
 FUNCTION STEAM Gen. Outlet Press
 RANGE 0-12 PSI x 10²
 OUTPUT NA
 ACTION TRD

REFERENCE DATA Spec. 7

BMC P/E E12-1-1

SPECIAL DATA

CALIB.	Input INCH	Desired PSI x 100	As Found PSI x 100	As Listed PSI x 100	ERROR				
1	2.5	0	0	0	0				
2	5.0	3	3	3	0				
3	7.5	6	7	6	0				
4	10.0	9	10	9	0				
5	12.5	12	11.5	12	0				
6					0				

REMARKS:

TEST EQUIPMENT USED

EQUIP. FLUKE DMM SER. NO. 530310 LAST CAL. 12/29/79 CAL. FREQ. 6
 EQUIP. LAMBSON PS SER. NO. A50208 LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 1/18/79 INITIALS J.D.S.
 PERFORMED BY J. Allen DATE 1/18/79 APPROVED BY J.P. [Signature] DATE 2/2/79

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP-6A-PI3

Group 167

Component Name _____

Date

Remarks (History of Corrective Maintenance)

1-73

Oil (Lubrication Acc. Method)

167

SYSTEM Secondary Plant
 LOCATION CT2 console 4
 TOLERANCE 12 psig ENG. UNIT OR
1 % OF SPAN
 MAX. ERROR OF % OF SPAN 0
 OR
 MAX. ERROR ENG. UNITS 0
 STATIC PRESSURE ERROR N/A

INST. NO. SP-6B-PI-1
 SERIAL NO. 724974
 MODEL OR TYPE BMC RY211XX
 FUNCTION S/G press. Loop B
 RANGE 0-1200 psig
 OUTPUT N/A
 ACTION Ind.

REFERENCE DATA Spec. 7
B+R Dwg 2381
BMC P/I E12-9

SPECIAL DATA Dual unit w/SP-6A-PI-1

CALIB.	Input VDC	Desired Ind PSIG	As Found PSIG	As Left PSIG					
1	2.5	0	20	0					
2	5.0	300	285	300					
3	7.5	600	585	600					
4	10.0	900	890	900					
5	12.5	1200	1190	1200					
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP. Data Precision DVM SER. NO. 4857 LAST CAL. 5/9/78 CAL. FREQ. 1
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 9/9/78 INITIALS RRR
 PERFORMED BY Rupert DATE 9/9/78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # SP6 B-7II

Group 167

Component Name _____

Date

Remarks (History of Corrective Maintenance)

10/15/77 REPAIRED METER AS PER WR. 1365. NEEDLE WAS RUBBING AGAINST THE C
RECALIBRATED AFTER REPAIR. TJW.

6/12/78 METER IND WAS HANGING UP ON LAST 1/3 OF SCALE, CLEAVED MATOUL
FROM MOVEMENT, ADJ. BALANCE, RECALIBRATED IT. RBT

9/7/78 Calibrated per W.K. 4820 RRR

INST. CAL. DATA SHEET

SYSTEM NH1 (SECONDARY PLANT)
 LOCATION CABLE ROOM (4-6-13)
 TOLERANCE 12 PSIG ENG. UNIT OR
.1 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. SP6B-P12
 SERIAL NO. _____
 MODEL OR TYPE BMC 6623518-1
 FUNCTION STAGED OUT PRESS LOOP
 RANGE +2.5 TO 12.5 VDC
 OUTPUT 0-12 PSIG X 100
 ACTION A.M. INO

REFERENCE DATA SPEC 7
BMC INST. E12-1-1
BMC DWG D8038499C

SPECIAL DATA

CALIB.	INPUT VDC	DESIRED OUTPUT	AS FOUND	AS LEFT					
1	+2.50	0	150	0					
2	+4.50	240	260	240					
3	+6.50	480	495	480					
4	+8.50	720	730	725					
5	+10.50	960	965	965					
6	+12.50	1200	1200	1200					

REMARKS:

TEST EQUIPMENT USED

EQUIP. DIGITEC 3110 SER. NO. 61260567 LAST CAL. 1/78 CAL. FREQ. 7/78
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. - CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MINISTRY HISTORY ENTRY: DATE 4/13/78 INITIALS APR
 PERFORMED BY APR DATE 4/13/78 APPROVED BY _____ DATE _____

MACHINERY HISTORY CARD (IGC/MEC/ELEC)

Unit TT

Component # SP6B-PI2

Group 167

Component Name _____

Date

Remarks (History of Corrective Maintenance)

4/13/78

RECALIBRATED

INST. NO. MS-TE-103

SER. NO. 77171

SYSTEM MS Main Steam FUNCTION RC-H-1B Outlet Temp.

LOCATION RBI MOD OR TYPE Rosemount R1 104WC35BX

TOLERANCE * % OF SPAN

SPECIAL DATA

RANGE	0-1200 °F Max.	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2002
ACTION	RTD Dual		

Calib RTD

G & B

R & W

CALIB.	Resist. Ohms	Temp. °F	Max Error	Resist. Ohms	Temp. °F		Resist. Ohms	Temp. °F	
1	115.55	103.4	.609	115.71	103.7	.3	115.71	103.7	.3
2									
3	132.25	180.6	.841	132.44	181.2	.6	132.44	181.2	.6
4									
5									

REMARKS * R/T Table #2 REC Report 26826-D

Installed per EDR 3865

REVIEWED BY K. Harvey 8-19-76
TEST EQUIPMENT

MAXIMUM ERROR IN PERCENT OF SPAN .713

PERFORMED BY E. Campbell EK DATE 5-9-77

REVIEWED BY E. Campbell DATE 2-11-77
UE&C INST. SUP.

ACCEPTED BY E. Stacey DATE 3-29-77
UE&C START-UP

LEN Resist. Thermo. Bridge	1771309
Rosemount RTD Model #104-1443-1	
Serial # 92644	

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TE-103

Group 70-1

Component Name TEMP ELEMENT

Date

Remarks (History of Corrective Maintenance)

10/10/78

C. Werner checked out everything from inside R.B. to Converter OK Read the
RTD and both elements were open. Saw pages 155 & 156 Converter log
by C.A.U. several descriptions of it.

INST. NO. MS-TE-104

SER. NO. 77172

SYSTEM MS Main Steam FUNCTION RC-II-1B Outlet Temp.

LOCATION RBI MOD OR TYPE Rosemount RI 104WC35BK

TOLERANCE * % OF SPAN SPECIAL DATA

RANGE	0-1200 °F Max	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2002
ACTION	RTD Dual		

Calib. RTD

C & E

R & W

CALIB.	Resist. Ohms	Temp. °F	Max Error	Resist. Ohms	Temp. °F		Resist. Ohms	Temp. °F	
1	115.72	104.1	.612	115.88	104.5	.4	115.88	104.5	.4
2									
3	132.42	181.4	.844	132.59	181.9	.5	132.59	181.9	.5
4									
5									

REMARKS *R/T Table #2 Report-REC 26826-D

Installed per EDR 3865

REVIEWED BY O. C.	
<i>E. Hawley</i>	<i>3-19-76</i>
O. C. ENGINEER	DATE

MAXIMUM ERROR IN PERCENT OF SPAN .653

TEST EQUIPMENT

PERFORMED BY *E. K. [Signature]* EK DATE 5-9-74

REVIEWED BY *E. [Signature]* DATE 2-11-77
 UE&C INST. SUP.

ACCEPTED BY *E. [Signature]* DATE 3-29-77
 UE&C START-UP

L&N Resist. Thermo. Bridge	1771309
Rosemount RTD Model #	104-1443-1
Serial #	92644

INST. NO. MS-TE-109

SER. NO. 77173

SYSTEM MS Main Steam FUNCTION RC-H-1A Outlet Temp.

LOCATION RBI MOD OR TYPE Rosemount R1 104WC35BX

TOLERANCE * % OF SPAN SPECIAL DATA _____

RANGE	0-1200 °F Max	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	#2002
ACTION	RTD Dual		

Calib. RTD

C & B

R & W

CALIB.	Resist. Ohms	Temp. °F	Max Error	Resist. Ohms	Temp. °F		Resist. Ohms	Temp. °F	
1	115.63	103.6	.601	115.79	104.0	.4	115.79	104.0	.4
2									
3	132.20	180.8	.842	132.47	181.4	.6	132.47	181.4	.6
4									
5									

REMARKS *R/T Table #2 REC Report 26826-D

Installed per EDR 3865

REVIEWED BY G.C.
[Signature] 8-19-76
Q. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN .712

PERFORMED BY [Signature] DATE 5-9-74

REVIEWED BY [Signature] DATE 2-11-77
UE&C INST. SUP.

ACCEPTED BY [Signature] DATE 3-29-77
UE&C START-UP

LSN Resist. Thermo. Bridge	1771309
Rosemount RTD	M-1 #104-1443-1
Serial #92644	

INST. NO. MS-TE-110

SER. NO. 77174

SYSTEM MS Main Steam FUNCTION RC-H-1A Outlet Temp.

LOCATION RBI MOD OR TYPE Rosemount R1 104WC35BX

TOLERANCE * % OF SPAN SPECIAL DATA _____

RANGE	0-1200 °F	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2002
ACTION	RTD Dual		

Calib. RTD

CALIB.	C & B			R & W		
	Resist. Ohms	Temp °F	Max Error	Resist. Ohms	Temp °F	Max Error
1	115.33	102.4	.607	115.47	102.6	.2
2						
3	132.53	182.0	.846	132.69	182.4	.4
4						
5						

REMARKS *R/T Table #2 REC Report 26826-D

Installed per EDR 3855

REVIEWED BY Q. C.

K. Harvey 8-13-76

MAXIMUM ERROR IN PERCENT OF SPAN .472

TEST EQUIPMENT

PERFORMED BY E. Campbell DATE 5-10-74

L&N Resist. Thermo Bridge 1771309

REVIEWED BY E. Campbell DATE 2-11-77
UE&C INST. SUP.

Rosemount RTD Model # 104-1443-1

ACCEPTED BY G. Lacey DATE 5-29-77
UE&C START-UP

Serial #92644

INST. CAL DATA SHEET

SYSTEM Reaction Control
 LOCATION RT-2 Room 4
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 % OF SPAN 1.0
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR N/A

INST. NO. RC3A-PR1 / RC3A-PS1
 SERIAL NO. NONE
 MODEL OR TYPE RC - WR-21A12X-4
 FUNCTION RC Press. Monitor Range
 RANGE 0-10 VDC
 OUTPUT 17-25 x 100 psi
 ACTION RECORDED + ALM.

REFERENCE DATA Spec - 17
BAR 2381
AME 1/E 4/12-92

SPECIAL DATA

CALIB.	INPUT VDC	DESIRABLE IND	AS FOUND	AS LEFT		HI ALM	AS FOUND	AS LEFT	
1	0	1700	1700	1700		2255	2255	2255	
2	2.5	1900	1900	1900					
3	5.0	2100	2100	2100		LO ALM	HI ALM	AS LEFT	
4	7.5	2300	2300	2300		2055	2080	2055	
5	10.0	2500	2500	2500					
6									

REMARKS: $HI\ ALM = 2255 = 69\% = 6.9375\ VDC$ $HI\ Point = 67.5\ %$
 $LO\ ALM = 2055 = 44\% = 4.4375\ VDC$ $LO\ Point = 45.0\ %$

TEST EQUIPMENT USED

EQUIP. Transistor SER. NO. 4015 LAST CAL. 12/77 CAL. FREQ. 60
 EQUIP. DVM - 415C - 20 SER. NO. 11557 LAST CAL. 5/78 CAL. FREQ. 1000
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 6/20/78 INITIALS R.S.
 PERFORMED BY Schlefer DATE 6/20/78 APPROVED BY [Signature] DATE 6/20/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC3A-PR1/RC3A-PS2

Group 148

Component Name Recorder
w/ HI + LO alarm

Date

Remarks (History of Corrective Maintenance)

1/20/78 Found LO ALARM GDS ON SURV 2302-R.I.L. Recal. Recorder

INST. NO. RC3A-PI2

SER. NO. 717181

SYSTEM Reactor Coolant FUNCTION RC Press. Lo Range Loop "B"

LOCATION CT2 Console # 4 MOD OR TYPE BMC RY 110XX

TOLERANCE .5 % OF SPAN SPECIAL DATA _____

RANGE 0-30 X 10 psig 0-10 VDC	REFERENCE DATA Spec. 7
OUTPUT	
ACTION Ind	BMC P/I E12-9-2

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	0	0	0						
2	2.5	7.5	7.5						
3	5	15	15						
4	7.5	22.5	22.5						
5	10	30	30						

REMARKS _____

REVIEWED BY Q.C.
K. Hardy 4/22/77
Q.C. ENGINEER ATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

PERFORMED BY *J. Campbell* VH/GH DATE 10/1/76

REVIEWED BY *J. Campbell* DATE 5-2-77
UE&C INST. SUP.

ACCEPTED BY *J. Campbell* DATE 7-22-77
UE&C START-UP

TEST EQUIPMENT

Weston 202191
Lambda P/S
OFFICIAL COPY

4-3

~~1-2-77~~

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-3A-PI2

Group 148

Component Name RY Consol Ind.

Date

Remarks (History of Corrective Maintenance)

SYSTEM UNF
 LOCATION RELAY ROOM
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 _____ .1 _____ % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

NO. 4-1-1
 SERIAL NO. 363
 MODEL OR TYPE ROSEMOUNT 414 F-2 F
 FUNCTION PREC TEMP.
 RANGE 0 TO 700°F
 OUTPUT 0 TO 100 mVDC
 ACTION TEMPERATURE BRIDGE

REFERENCE DATA SPEC 7
NO. 04038484 C

SPECIAL DATA

CALIB	TEMP. °F	INPUT mVDC	DESIRED OUTPUT	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	0°	93.15	0.00	0.00						
2	140°	122.70	20.0	19.80						
3	280°	153.58	40.0	39.85						
4	420°	182.77	60.0	59.90						
5	560°	211.27	80.0	79.97						
6	700°	239.12	100.0	100.00						

REMARKS:

TEST EQUIPMENT USED

EQUIP. FLUOR 8600A SER. NO. 530306 LAST CAL. 11/77 CAL. FREQ. 4/77
 EQUIP. DECADE BOX SER. NO. 18397 LAST CAL. 2/78 CAL. FREQ. 2/77
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MINISTRY HISTORY ENTRY DATE 3/25/78 INITIALS JA/C
 PERFORMED BY Jessica A. Kelly DATE 3/6/78 APPROVED BY _____ DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC2-TT-1

Group 148

Component Name Rosemount Bridge
4-1-1

Date

Remarks (History of Corrective Maintenance)

3/25/78

RECALIBRATED 3/6/78

INST. NO. RC-2-TE1-TE2

SER. NO. 94169

SYSTEM Reactor Coolant FUNCTION Pressurizer Wtr. Temp.

LOCATION RBI Press. MOD OR TYPE REC 104AAP-2 Dual RTD

TOLERANCE * % OF SPAN SPECIAL DATA _____

RANGE <u>0-700^oF</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>Res.</u>	B&R Dwg. <u>2453</u>
ACTION <u>Dual RTD</u>	

CALIB.	Loop Res.	Total Res	Corr Res.	Temp ^o F	Test				
					Temp ^o F	Error ^o F			
1 & 2	.705	139.675	138.970	211.8	211.5	.3			
3 & 4	.705	139.615	138.910	211.3	211.5	.2			

REMARKS Over 1000 Meg to Gnd.

* R/T Table # 2 REC Report 26826-D Limit of error 211.5^oF = .93

REVIEWED BY Q. C.	
<u>K. H. ...</u>	<u>5-6-77</u>
Q. C. ENGINEER	DATE

Limit of error 32.2

MAXIMUM ERROR IN PERCENT OF _____

PERFORMED BY VH/GH DATE 3/3/77

REVIEWED BY E. ... DATE 5-6-77
UE&C INST. SUP.

ACCEPTED BY J. ... DATE 7-21-77
UE&C START-UP

2-23

TEST EQUIPMENT

L&N Res. Bridge 1771309

Voltomyst 9022L13

Ash. E66

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~~1-105~~

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-2-TE1-TE-2

Group 148

Component Name Dual RTD

Date

Remarks (History of Corrective Maintenance)

SYSTEM REACTOR COOLANT
 LOCATION CONTROL ROOM PNL. 4
 TOLERANCE .5 ENG. UNIT OR % OF SPAN
 MAX. ERROR OF % OF SPAN .0025
 MAX. ERROR ENG. UNITS
 STATIC PRESSURE ERROR

INST. NO. RC-1-LR/RC-1-LS2
 SERIAL NO. NONE
 MODEL OR TYPE WR RECORDER
 FUNCTION PRESSUREIZER LEVEL
 RANGE 0-400"
 OUTPUT Indication
 ACTION INDICATION

REFERENCE DATA BMC 080384856
BTR DWG. 2024

E12-92
Pg. 3

SPECIAL DATA CHART SA-100

H1 ALARM = 260" H²O
LO ALARM = 200" H²O

CALIB.	INPUT VOLTS D.C.	DISIRED. INDICATION INCHES H ² O	AS FOUND	AS LEFT	ERROR	ALARMS	INPUT V. D.C.	AS FOUND	AS LEFT
1	-10	0	0	0		H1	+2.98	+2.55	+2.97
2	-6	80	75	80		LO	.00	-1.05	-1.05
3	-2	160	155	160					
4	+2	240	240	239	01				
5	+6	320	325	319	01				
6	+10	400	400	400					

REMARKS:

TEST EQUIPMENT USED

QUIP.	FLUKE DVM	SER. NO.	530306	LAST CAL	10-13-77	CAL. FREQ.	6mc
QUIP.		SER. NO.		LAST CAL.		CAL. FREQ.	
QUIP.		SER. NO.		LAST CAL.		CAL. FREQ.	
QUIP.		SER. NO.		LAST CAL.		CAL. FREQ.	
QUIP.		SER. NO.		LAST CAL.		CAL. FREQ.	
QUIP.		SER. NO.		LAST CAL.		CAL. FREQ.	

MACHINERY HISTORY ENTRY: DATE 12-22-77 INITIALS Ech
 PERFORMED BY E. Helfner DATE 12-22-77 APPROVED BY E. K. Bennett DATE 1/9/78
L. EBERLY

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # AC-1-LR/AC-1-L52

Group 148

Component Name Recorder
w/ HI + LO alarms

Date

Remarks (History of Corrective Maintenance)

2-22-77 UNLIBRATED AND RESET HI + LO STOPS EG

SYSTEM RC (Pressurized Level)
 LOCATION Box BLR 281 Elev Valve Alley
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 % OF SPAN _____
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-1-LI-3
 SERIAL NO. NA
 MODEL OR TYPE Bailey E5-170
 FUNCTION Indicator
 RANGE 0-400 IN. H₂O
 OUTPUT _____
 ACTION _____

REFERENCE DATA Bailey Instruction Manual

SPECIAL DATA

Desired

CALIB.	HOH <small>Scale x 100</small>	VDC	AS Found HOH	LES At HOH				
1	11	+10	3.3	4				
2	3	+5	2.2	3				
3	2	0	1.3	2				
4	1	-5	—	1				
5	0	-10	—	0				
6								

REMARKS:

TEST EQUIPMENT USED

EQUIP. Fluke SER. NO. 53093 LAST CAL. 6/78 CAL. FREQ. 6m
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY DATE 9/25/78 INITIALS J.F.S.
 PERFORMED BY J. H. Cain DATE 9/25/78 APPROVED BY [Signature] DATE 9/27

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC1-LI-3

Group _____

Component Name RESSURIZAZIONE Level

Date

Remarks (History of Corrective Maintenance)

9/25/78

Calib. Tnd.

(

(

INST. NO. RC1-LI1

SER. NO. None

SYSTEM Reactor Coolant FUNCTION Pressurizer Level from RC1-LI1

LOCATION Cbl. Rm. (3-7-13) MOD OR TYPE BMC 6623518-1

TOLERANCE 1.0 % OF SPAN SPECIAL DATA _____

RANGE <u>+10 VDC</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>0-40" X 10</u>	BMC Inst. <u>E12-1-1</u>
ACTION <u>PM Ind.</u>	" <u>Dwg. D-8038484C</u>

CALIB.	Input Volts	Req Output Lev In	Meas Output Lev In	Error				
1	+10.00	400	400	---				
2	+ 5.00	300	300	---				
3	0.0	200	200	---				
4	- 5.00	100	100	---				
5	-10.00	0	0	---				

REMARKS Std. Calib.

REVIEWED BY Q. C.
R. Harvey 4/21/77
Q. C. ENGINEER / DATE
NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN 0

TEST EQUIPMENT

PERFORMED BY *A. Campbell* ER DATE 8/9/76
REVIEWED BY *E. Handahl* DATE 5-2-77
UE&C INST. SUP.
ACCEPTED BY *J. W. ...* DATE 7-21-77
UE&C START-UP

BMC DC Pwr Sup E32
Fluke 3560
Variac

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MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-1-LI-1

Group 148

Component Name PM Indicator
3-7-13

Date

Remarks (History of Corrective Maintenance)

INST. CAL DATA SHEET

SYSTEM Pressure Control 100/200
 LOCATION Boiler Room Basement RR 426
 TOLERANCE 0.25% ENG. UNIT OR
 OR % OF SPAN
 MAX. ERROR OF % OF SPAN 0.024%
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-1-673
 SERIAL NO. 715623
 MODEL OR TYPE BY 8240 Y-A
 FUNCTION Int
 RANGE 0-50
 OUTPUT ± 10.00
 ACTION W/0.0250

REFERENCE DATA Bmc E21-17-2
D 8038487
3+17 2124

SPECIAL DATA

CALIB.	No of	psi	Wspnd	HS	HS	As	As	Wspnd		
	<u>40</u>			<u>Sound</u>	<u>Sound</u>	<u>Lat</u>	<u>Lat</u>			
1	<u>0</u>	<u>0</u>	<u>+10</u>	<u>10.072</u>	<u>10.072</u>	<u>9.965</u>	<u>9.965</u>	<u>0.015</u>		
2	<u>80</u>	<u>2.84</u>	<u>+6</u>	<u>6.038</u>	<u>6.000</u>	<u>6.017</u>	<u>6.012</u>	<u>0.017</u>		
3	<u>160</u>	<u>5.76</u>	<u>+2</u>	<u>2.008</u>	<u>2.000</u>	<u>2.002</u>	<u>2.000</u>	<u>0.002</u>		
4	<u>240</u>	<u>8.64</u>	<u>-2</u>	<u>-1.948</u>	<u>2.020</u>	<u>1.948</u>	<u>2.000</u>	<u>0.012</u>		
5	<u>320</u>	<u>11.52</u>	<u>-6</u>	<u>-5.961</u>	<u>6.030</u>	<u>6.000</u>	<u>6.000</u>	<u>0.000</u>		
6	<u>400</u>	<u>14.40</u>	<u>-10</u>	<u>9.961</u>	<u>9.961</u>	<u>10.000</u>	<u>10.000</u>	<u>0.000</u>		

REMARKS:

TEST EQUIPMENT USED

EQUIP. DIGI GAUGE SER. NO. 3931 LAST CAL. 7-78 CAL. FREQ. 6MO
 EQUIP. FLUKE 8600A SER. NO. 0875091 LAST CAL. 9-78 CAL. FREQ. 6MO
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

WINERY HISTORY ENTRY DATE 9/23/78 INITIALS WJ
 PERFORMED BY WJ DATE 9/23/78 APPROVED BY JK DATE 9/27/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-1-LT-3

Group 148

Component Name Transmitter

Date

Remarks (History of Corrective Maintenance)

1-5-78 FOUND OUT OF CAL. - CALIBRATION PERFORMED - Eab

~~1-5-78 Found out of cal. - calibration performed - Eab~~

7/23/78 Replace helium Vent P-CAL 67

SYSTEM ICS/NNI REACTOR COOLANT

INST. NO. RCI-LT2

LOCATION R.B. 281' ELEV. RK 424

SERIAL NO. 715672

TOLERANCE 50 mv ± .05 MV ENG. UNIT
.025 OR % OF SPAN

MODEL OR TYPE BMC # BY 3840 X-A

FUNCTION PRZ'R LEVEL

MAX. ERROR OF % OF SPAN _____

RANGE 0 TO 400" H₂O

MAX. ERROR ENG. UNITS _____

OUTPUT ± 10 VDC

STATIC PRESSURE ERROR _____

ACTION DIFF. PRESS TRANSMITTER

REFERENCE DATA

BMC E21-17-2

08038484

R&R 2024

SPECIAL DATA

INC "H₂O DEC "H₂O

CALIB.	INPUT "H ₂ O	DESIRED OUTPUT	AS FOUND	AS LEFT	AS LEFT				
1	0.0"	+10.0	11.945	10.005	10.005				
2	80.0"	+6.0	7.766	6.011	6.027				
3	160.0"	+2.0	3.875	2.017	2.024				
4	240.0"	-2.0	-2.250	-1.987	-1.990				
5	320.0"	-6.0	-4.318	-5.981	-5.993				
6	400.0"	-10.0	-8.370	-9.970	-9.999				

REMARKS: WET REF. LEG. WHEN ORIG. VALVED OUT HAD +9.985 MV WITH EQUILIZERS OPEN, WHILE BLOWING DOWN LEGS & REFILLING EXPERIENCED A ZERO SHIFT, WHICH RESULTED IN THE ABOVE AS FOUND DATA.

TEST EQUIPMENT USED

EQUIP. <u>FLUKE 8600A</u>	SER. NO. <u>530288</u>	LAST CAL <u>10/16/78</u>	CAL. FREQ. <u>6 MO.</u>
EQUIP. <u>HEISE 0-600"</u>	SER. NO. <u>19226</u>	LAST CAL <u>6/5/78</u>	CAL. FREQ. <u>YRL</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 12/31/78 INITIALS GR

PERFORMED BY RDCH/GILBERT DATE 12/29/78 APPROVED BY DEW DATE 1/22/79

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # AC-1-LT2

Group 148

Component Name Transmitter

Date

Remarks (History of Corrective Maintenance)

- 1-5-78 CALIBRATION PERFORMED - FOUND OUT OF CAL. - FIXED - EAB
- 4-5-78 calibration satisfactory - found out of cal - TRC
- 12-29-78 PRZ'R LEVEL READING 100" HIGHER THAN LT1&3, HAD LEAK BY EXTERNAL EQUALIZER, BLEW DOWN LINES, PUT BACK IN SERVICE. RECALIBRATED, DUE TO A ZERO SHIFT OCCURRING ~~STARTING~~ WHEN FILLING THE LINES AFTER BLOWDOWN. *TRC*

INST. CAL. DATA SHEET

SYSTEM Reactor Control
 LOCATION 210 RK 424
 TOLERANCE 0.01% ENG. UNIT OR
0.25 % OF SPAN
 MAX. ERROR OF % OF SPAN 0.15
 OR
 MAX. ERROR ENG. UNITS 0.025
 STATIC PRESSURE ERROR 0

INST. NO. RC-1-L71
 SERIAL NO. 715614
 MODEL OR TYPE BMG 64-5401-14
 FUNCTION Pressure Transducer
 RANGE 0-400" H₂O
 OUTPUT 5-10VDC
 ACTION AP RMTA

REFERENCE DATA CL DAG 2024

Friday 9/5 E-21-17

SPECIAL DATA A

CALIB.	INSTR "H ₂ O"	H ₂ PRESS	H ₂ INCH	DIFFER						
1	0	10.075	1.774	.006						
2	80	6.045	2.774	.006						
3	160	2.077	1.990	.006						
4	240	1.716	2.006	.006						
5	320	5.918	5.976	.004						
6	400	9.595	9.977	.026						

REMARKS:

TEST EQUIPMENT USED

EQUIP. Pressure Digipage SER. NO. 3021 LAST CAL. 3/27/78 CAL. FREQ. 1
 EQUIP. FLAME DVM SER. NO. 5312 LAST CAL. 3/27/78 CAL. FREQ. 1
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MAINTENANCE HISTORY ENTRY: DATE 5-25-78 INITIALS IVA

PERFORMED BY W. A. P. [Signature] DATE 5-25-78 APPROVED BY [Signature] DATE 3/27/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-1-LT-1

Group 148

Component Name Transmitter

Date

Remarks (History of Corrective Maintenance)

1-5-77 WAS FOUND OUT OF SPEC CALIBRATION PERFORMED
3-25-78 RECALIBRATED AFTER OPS VALVED XMTA OUT INCORRECTLY.

MI - 2

UNIT 2

3 MILE ISLAND NUCLEAR STATION #2

INSTRUMENT LOOP TESTSYSTEM REACTOR COOLANT DATA SHEET 1 OF 1STRING OR LOOP NO. RC-3A-PT5 TOLERANCE ± 2% of SpanDRAWING REF. Bailey 8038489, B&RDESCRIPTION Reactor Coolant Pressure Low Range Ind.

CONTROL SETTINGS

RC-3A-PT5			RC-3A-PT2							
INPUT PSIG	DESIRED OUT. MA	ACTUAL OUT. MA	DESIRED INPUT MA	DESIRED IND. PSIG	ACTUAL IND. PSIG					
0	10		10	0	0					
125	20		20	125	75					
250	30		30	250	150					
375	40		40	375	222.5					
500	50		50	500	300					

REMARKS: 100% Error = .85% of span B&W To Correct Scale To 0-500 IndicationTEST EQUIPMENT USEDDVM Simpson 460 SER. NO. 3348 SER. NO. _____Hi-C Gauge SER. NO. 11016 SER. NO. _____PERFORMED BY W. J. Littlefield DATE: 5-23-77

OFFICIAL COPY

MI - 2
UNIT

3 MILE ISLAND CLEAR STATION #2

INSTRUMENT LOOP TEST

MTX-148

DATA SHEET 1 OF 1

SYSTEM REACTOR COOLANT PRESSURIZER TEMP

STRING OR LOOP NO. RC-2-TT2 TOLERANCE ± 2% of Span

DRAWING REF. Bailey 8038484

DESCRIPTION Reactor Coolant Pressurizer temp. ind.

CONTROL SETTINGS None

INPUT RES. OIEMS	RC-2-TT2 (10-1-1)		RC-2-TT2 (10-2-2)		RC-2-TI			
	DESIRED OUTPUT MV	ACTUAL OUT. MV	DESIRED INPUT MV	DESIRED OUT. VDC	ACTUAL OUT. VDC	DESIRED INPUT VDC	DESIRED IND. OF	ACTUAL IND. OF
93.11	0		0	-10.00		-10.00	0	0
131.15	25		25	-5.00		-5.00	175	180
1-168.20	50		50	+ .00		+ .00	350	350
204.18	75		75	+5.00		+5.00	525	535
239.75	100		100	+10.00		+10.00	700	700

REMARKS: Max Loop Error = .71% of Span

OFFICIAL COPY

TEST EQUIPMENT USED

Decade Box SER. NO. 3131

SER. NO.

DVM Fluke SER. NO. 4412

SER. NO.

PERFORMED BY P.T. Anderson

DATE: 5-4-77

INST. NO. RC-10-TEL

SER. NO. None

SYSTEM Reactor Coolant

FUNCTION Press. Relief Outlet Temp. to Co

LOCATION RBI

MOD OR TYPE Thermo Elec. Type E

TOLERANCE +1^oF XXXXXXXXXX

SPECIAL DATA Chr.-Con.

RANGE <u>0-700^oF</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>MV</u>	B&R Dwg. <u>2403</u>
ACTION <u>Thermocouple</u>	TE P/I Section <u>6M Ec. 3</u>

CALIB.	Test Temp OF	Output MV	Temp OF	Error OF				
1	211	4.78	210.9	.1				
2								
3								
4								
5								

REMARKS Grounded TE

Purple + Red -

REVIEWED BY <u>G.C.</u>	
<u>K. Harney</u>	<u>5-6-77</u>
O. C. ENGINEER	DATE

MAXIMUM ERROR IN PERCENT OF Limit of error 10.0

PERFORMED BY A. Cammell DATE 3/3/77
VH/GH

VIEWED BY E. Seimlich DATE 5-6-77
UE&C INST. SUP.

ACCEPTED BY RT Carlson DATE 7-22-77
UE&C START-UP 1-72

TEST EQUIPMENT

L&N Millivolt E103

Ash. E66

Voltohmyst 9022L113

OFFICIAL COPY

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-10-TE-1

Group 148

Component Name Thermo couple
Type E chr. - Con.

Date

Remarks (History of Corrective Maintenance)

INST. NO. RC-9-TE

SER. NO. None

SYSTEM Reactor Coolant

FUNCTION Press. Inlet Hdr. Temp. to Comp.

LOCATION RBI

MOD OR TYPE Thermo-Electric Type E

TOLERANCE +1°F EXGROSSAN

SPECIAL DATA Chr-Con

RANGE <u>0-700°F</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>MV</u>	B&R Dwg. <u>2452</u>
ACTION <u>Thermocouple</u>	TE P/I Section <u>6M Edition 3</u>

CALIB.	Test Temp	Output MV	Temp °F	Error OF					
1	211	4.76	210.4	.6					
2									
3									
4									
5									

REMARKS Gnd. TE
Purple & Red

REVIEWED BY Q. C.
<u>K. Hawley</u> <u>5-6-77</u>
Q. C. ENGINEER DATE

Limit of error 60.0

MAXIMUM ERROR IN PERCENT OF _____

PERFORMED BY VH/GH DATE 3/3/77

REVIEWED BY E. S. Smith DATE 5-6-77
UE&C INST. SUP.

ACCEPTED BY RT Carlson DATE 7-22-77
UE&C START-UP 1-71

TEST EQUIPMENT

L&N Millivolt E103
Ash. E66
Voltohmyst 9022L113
OFFICIAL COPY

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-9-TE

Group 148

Component Name Thermocouple
Type E Chr-Con

Date

Remarks (History of Corrective Maintenance)

INST. NO. RC5A-TE3/RC5A-TE4

SER. NO. 3676

SYSTEM Reactor Coolant

FUNCTION RC Inlet Temp.

LOCATION RB1 5N-27W

MOD OR TYPE REC. 177HW

TOLERANCE * % OF SPAN

SPECIAL DATA Dual Plat. RTD

RANGE	TE3-520-620°F TE4 50-650°F	REFERENCE DATA	Spec. 7
OUTPUT	204-225 Ohms Approx. 104-230 Ohms Approx.	E&R Dwg.	2452
ACTION	Temp. Sensor	RMT Man.	127311E

(RTD Lead Resist)

Ins Res

Res to

CALIB.	Temp °F	R-W	R-R	W-W	R-Gr	Case		
1	80	110.8	1.0	.9	Over 1000 M	Over 1000 M		
2		Gr-Blk	Gr-Gr	Blk-Blk	Blk-Wh			
3	80	111.2	.0	.0	Over 1000 M	"	"	"
4								
5								

REMARKS Element # 1 Red-White

Element # 2 Green-Black 50-650°F Range

* RMT Proc. 9712 Functional check

REVIEWED BY Q. C.

K. Harvey 4/22/77

Q. C. ENGINEER

DATE

MAXIMUM ERROR IN PERCENT OF SPAN *

PERFORMED BY A. Campbell

VH

DATE 9/29/75

REVIEWED BY E. Semelch

UE&C INST. SUP.

DATE 5-6-77

ACCEPTED BY RT Carlson

UE&C START-UP

DATE 7-22-77

1-27

TEST EQUIPMENT

Calibration Curve RC-5A-TE3-TE4

Fluke E301

Master Voltohmyst # 90226113

OFFICIAL COPY

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC5A-TE3/RC5A-TE4

Group 149

Component Name RC Inlet Temp
Dual RTD

Date

Remarks (History of Corrective Maintenance)

~~1-27~~ 1-27

INST. CAL. DATA SHEET

SYSTEM Fractor 2000
 LOCATION WT
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 % OF SPAN _____
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. 100-2000-1
 SERIAL NO. 100100
 MODEL OR TYPE FRAC 2000
 FUNCTION Pressure (300) 1000
 RANGE 0-100
 OUTPUT _____
 ACTION Cal

REFERENCE DATA Spec 1

SPECIAL DATA WT

CALIB.	Instr	Point	Span	Err						
1	0.0	-	-	5						
2	1.0	17	17	17						
3	2.0	34	34	34						
4	3.0	51	51	41						
5	4.0	68	68	53						
6	5.0	85	85	55						

REMARKS:

TEST EQUIPMENT USED

EQUIP. Test Block SER. NO. 1001 LAST CAL. 2/80 CAL. FREQ. 100
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE March 2, 1980 INITIALS NI
 PERFORMED BY J. L. ... DATE 3/2/80 APPROVED BY J. L. ... DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit IT

Component # RC5A-TI-1

Group 149

Component Name RY Consol Ind.

Date

Remarks (History of Corrective Maintenance)

3-30-78 (W) Sat. 3 cleaned TBs

INST. CAL. DATA SHEET

SYSTEM AIR HANDLING
 LOCATION CTR PNL #25
 TOLERANCE 1 ENG. UNIT
 OR .5 % OF SPAN
 MAX. ERROR OF % OF SPAN +
 OR 0.2
 MAX. ERROR ENG. UNITS
 STATIC PRESSURE ERROR

INST. NO. AN INSTR - 5017
 SERIAL NO. 749-8562
 MODEL OR TYPE BOSTON 550 24P
 FUNCTION MISC. S.C. TEMPS
 RANGE 93.02 - 135.97 CHMS (0-20)
 OUTPUT N/A
 ACTION RECORDED

REFERENCE DATA Spec. 63
PER DWG 2041
BOSTON PLE PT 2552-A

SPECIAL DATA

CALIB.	INPUT CHMS	DESIRED CF	AS FOUND CF	AS LEFT CF					
1	93.02	0	16	0.3					
2	101.56	40	55	39.8					
3	110.38	80	96	80.2					
4	118.97	120	136	120.0					
5	127.50	160	176	160.0					
6	135.97	200	200+	200.0					

REMARKS:

TEST EQUIPMENT USED

EQUIP. 120000 BRISTOL SER. NO. 16778 LAST CAL. 9/75 CAL. FREQ. 1y
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SE^Q. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SE NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 3-23-79 INITIALS D.C.K.
 PERFORMED BY D. KLINGESMAN DATE 3-23-79 APPROVED BY J.P. [Signature] DATE 3/24/79

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # AH-VMTR-SQ17

Group 134

Component Name MISC RB TEMPS.

Date	Remarks (History of Corrective Maintenance)
8-23-79	REPLACED MISC RB TEMPS. [unclear]
5-3-79	REPLACED MECHANICAL STOP & SET UP [unclear]

INST. NO. BS-PR-1412

SER. NO. X830JD23110D-3313

SYSTEM Eldg. Spray FUNCTION Reac. Bldg. Press.

LOCATION CT2 Con. 3 MOD OR TYPE Taylor 830JD

TOLERANCE NA % OF SPAN SPECIAL DATA _____

RANGE	0-100/-5 to +10 psig(10-50)	REFERENCE DATA	Spec. 46
OUTPUT	E&R Dwg. 2034, 2381		
ACTION	Press. Rec.	Taylor P/I A2300	

CALIB.	(Red)			(Green)				
	Input MA	Desired	Actual	Input MA	Desired	Actual		
1	10	0	0	10	-5	-5		
2	20	25	25	20	-1.25	-1.25		
3	30	50	50	30	+2.5	+2.5		
4	40	75	75	40	+6.25	+6.25		
5	50	100	100	50	+10	+10		

REMARKS Terminals 8 & 9 Green Pen

" 10 11 Red Pen

REVIEWED BY Q. C.	
<u>K. Hawley</u>	<u>2/12/77</u>
Q. C. ENGINEER	DATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

TEST EQUIPMENT

PERFORMED BY VH/GH DATE 11/22/76

Fox. # 3

REVIEWED BY E. Handahl DATE 2-12-77
UE&C INST. SUP.

ACCEPTED BY E. Seay DATE 4-1-77
UE&C START-UP

INST. NO. BS-PR-4388

SER. NO. X830JD23110D-3312

SYSTEM Bldg. Spray FUNCTION Reac. Bldg. Press.

LOCATION CT2 Con. 3 MOD OR TYPE Taylor 830JD

TOLERANCE NA % OF SPAN SPECIAL DATA _____

(10-50 MA)

RANGE	0-100/-5 to +10 psig	REFERENCE DATA	Spec. 46
OUTPUT		B&R Dwg.	2034, 2381
ACTION	Press. Recorder	Taylor P/I	A2300

CALIB.	Red			Green		
	Input MA	Desired	Actual	Input MA	Desired	Actual
1	10	0	0	10	-5	
2	20	25	25	20	-1.25	
3	30	50	50	30	+2.5	
4	40	75	75	40	+6.25	
5	50	100	100	50	+10	

REMARKS Terminals 8 & 9 Green Pen
Terminals 10 11 Red Pen

REVIEWED BY Q.C.
K. G. [Signature] 2/12/77
Q.C. ENGINEER LATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

TEST EQUIPMENT

PERFORMED BY VH/GH DATE 11/22/76

Fox. # 3

REVIEWED BY [Signature] DATE 2-12-77
UE&C INST. SUP.

ACCEPTED BY [Signature] DATE 4-1-77
UE&C START-UP

INST. CAL DATA SHEET

SYSTEM DECAJ HEAT REMOVAL
 LOCATION _____
 TOLERANCE 100% ENG. UNIT _____
 OR _____
 _____ 5 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR 0

INST. NO. DH3-LT1
 SERIAL NO. 736961
 MODEL OR TYPE RYE24-XA
 FUNCTION BURST LEVEL
 RANGE 0 - 23.95 PSE
 OUTPUT -9.06 TO +10.00 VDC
 ACTION ACCEPTED

REFERENCE DATA

SPECIAL DATA

CALIB.	AS FOUND	DESIRED INPUT PSE	DESIRED OUTPUT VDC	ACTUAL OUTPUT PSE	ACTUAL OUTPUT VDC	ERRR			
1	NA	0	-9.65	0	-9.678	.018			
2		4.40	-6.00	4.40	-6.04	.04			
3		9.24	-2.00	9.33	-2.000	.000			
4		14.20	+2.00	14.20	+2.008	.008			
5		19.07	+6.00	19.07	+5.956	.044			
6		23.95	+10.00	23.95	+10.004	.004			

REMARKS:

TEST EQUIPMENT USED

EQUIP. HOUSE SER. NO. 18476 LAST CAL. 7/79 CAL. FREQ. 45
 EQUIP. HOUSE 214 SER. NO. 530306 LAST CAL. 10/79 CAL. FREQ. 60
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MAINTENANCE HISTORY ENTRY DATE 2/17/79 INITIALS DS
 PERFORMED BY D. P. [Signature] DATE 2/17/79 APPROVED BY [Signature] DATE 2/17/79

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # DH3-LT1

Group 47

Component Name BUST level

Date

Remarks (History of Corrective Maintenance)

8/4/77 Cal XMTR per WR # 927

9/2 HEAD CORRECTION OF -0.217 PSI CAL XMTR SAT.

2/77 CAL XMTR PER WR # 1127

SYSTEM Decay Heat Removal
 LOCATION DT2 Panel 8
 TOLERANCE _____ ENG. UNIT
 OR 1.0 % OF SPAN
 MAX. ERROR OF % OF SPAN 0
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. DH3-LI-1
 SERIAL NO. 717159
 MODEL OR TYPE MMC-RY120XY
 FUNCTION RWST Level
 RANGE +10V_{dc}-10V
 OUTPUT 0-56'
 ACTION _____

REFERENCE DATA Spill 7 E12-9
R-R 2381
MOOD. PC. 7504-100

SPECIAL DATA

CALIB.	INPUT VDC	DESIGN +NO.	AS FOUND	AS LEFT					
1	-10.00	0	.5	0					
2	-5.00	14	14.5	14					
3	0.00	28	28.5	28					
4	75.00	42	43	42					
5	+10.00	56	>56	56					
6									

REMARKS:

TEST EQUIPMENT USED

EQUIP. FLUKE DVM SER. NO. 530314 LAST CAL. 2/17/77 CAL. FREQ. ANNU
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 5/4/77 INITIALS N
 PERFORMED BY T. Riggerback DATE 5/4/77 APPROVED BY J.P. West DATE 8/9/77

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # DH3-LI 1

Group 47

Component Name BWST level

Date	Remarks (History of Corrective Maintenance)
8/4/77	Cal BY per WR # 927 R
12-11-77	Ascalibrate - Due to bellows being destroyed by freeze.

INST. CAL DATA SHEET

SYSTEM NMI (Dray Heat Pumps)
 LOCATION Booby Basin (11-6-13)
 TOLERANCE _____ ENG. UNIT _____
 OR
 _____ % OF SPAN
 MAX. ERROR OF % OF SPAN .017
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. DH3-LS3
 SERIAL NO. _____
 MODEL OR TYPE BMC. 6-6.1330.3-1
 FUNCTION Boat Water Storage TK level (1/2" H₂O)
 RANGE 20 vdc.
 OUTPUT Contact Closure
 ACTION Signal Monitor

REFERENCE DATA

D3038507 I92-4

SPECIAL DATA SET POINTS
 $H/P = 53.4' = +9.785$
 $L/L = 54.1" = +9.322$

CALIB.	Trlay		Desired Trip vdc.	AS Found vdc	AS Left vdc	Asst	Error		
1									
2	K1	H ^P Alarm	+9.785	+9.554	+9.501	+9.835	.016		
3									
4	K2	L ^O Alarm	+9.322	+9.074	+9.305	+9.343	.017		
5									
6									

REMARKS: Set points changed as per TCN BWST - Normal Level = 54.1"
12h Spec. Low Level = 53.6"

TEST EQUIPMENT USED

EQUIP. Pirley Test Stand SER. NO. TA3 LAST CAL. _____ CAL. FREQ. _____
 EQUIP. Floke NMH 8600A SER. NO. 530314 LAST CAL. 6/78 CAL. FREQ. 12/78
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY: DATE 10/28/78 INITIALS JEE
 PERFORMED BY [Signature] DATE 10/28/78 APPROVED BY [Signature] DATE 10/30/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # DH3-L53

Group 417

Component Name BWST Level Alarm

Date

Remarks (History of Corrective Maintenance)

4/2/77

RECALIBRATED 10/7/78

10/29/75

Found Set Points changed no cal sheet / 7CN back to old Set Points 48.5

SYSTEM DECAY HEAT Removal
 LOCATION BWST YY1 MTR 43
 TOLERANCE .1VDC ENG. UNIT OR
.5 % OF SPAN
 MAX. ERROR OF % OF SPAN .25
 OR
 MAX. ERROR ENG. UNITS - .051VDC
 STATIC PRESSURE ERROR N/A

INST. NO. UH-3-LTZ
 SERIAL NO. 739080
 MODEL OR TYPE BY 9240X-A
 FUNCTION BWST LEVEL
 RANGE 0-56'
 OUTPUT -10 - +10 VDC
 ACTION RE LEV. XAIR

REFERENCE DATA SPEC 7 BTR DWG 2026

P/I Bailey E41-6

SPECIAL DATA

CALIB.	INPUT		OUTPUT		% ERROR	AS FOUND			
	DESIRED PSIG	ACTUAL	DESIRED VDC	ACTUAL					
1	0	0	-9.98	9.985	.075	NO AS FOUND TOLERANCE DAMAGED			
2	4.85	4.85	-6.0	6.051	.25				
3	9.72	9.72	-2.0	2.04	.2				
4	14.60	14.60	+2.0	2.02	.1				
5	19.47	19.47	+6.0	6.01	.05				
6	24.34	24.34	+10.0	10.00	0				

REMARKS:

TEST EQUIPMENT USED

EQUIP. HEISE SER. NO. 19225 LAST CAL. 2-11-77 CAL. FREQ. 1/2
 EQUIP. FLUKE 800A SER. NO. 530306 LAST CAL. 10-77 CAL. FREQ. 1/2
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

**MACHINERY HISTORY ENTRY: DATE 12-10-77 INITIALS WS
 PERFORMED BY W. ASBURY DATE 12-10-77 APPROVED BY D. Williams DATE 12/11/77

MACHINERY HISTORY CARD (IGC/MEC/ELEC)

Unit II

Component # DH3-LT2

Group 47

Component Name BWST Level

Date

Remarks (History of Corrective Maintenance)

9/1 HEAD CORRECTION OF + 1181 PSI, REPLACED AMP. AND CAL. SAT THIS DATE

10-5 ~~Calibrated in per Dev. Procedure 2302-R19~~

12-10-71 CALIBRATED DUE TO FREEZE. ~~RECALIBRATED~~

SYSTEM NVE (Dry Heat Removal)
 LOCATION Relay Room (7-1-9)
 TOLERANCE _____ ENG. UNIT _____
 OR 0.25 % OF SPAN
 MAX. ERROR OF % OF SPAN .020
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. DH.3-451
 SERIAL NO. _____
 MODEL OR TYPE BHC # 6-613303-1
 FUNCTION Treated Water Storage Tank Level (Hi/Low)
 RANGE 2000
 OUTPUT Contact Closures
 ACTION Signal Monitor

REFERENCE DATA

D5038-507 E92.4

SPECIAL DATA SET Points $H^o = 55.4' = +9.785$
 $L^o = 54.1' = +9.322$

CALIB.	Relay		Desired Trip WOC	H ^o Found WOC	H ^o Left WOC	First	Errors
1							
2	K1	H ^o Alarm	+9.785	+9.532	+9.805	+9.875	.020
3							
4	K2	L ^o Alarm	+9.322	+9.059	+9.328	+9.353	.006
5							
6							

REMARKS: Set Points changed as per TCN BWST - Normal Level = 54.1'
Tank Spec Low Level = 53.6'

TEST EQUIPMENT USED

EQUIP.	SER. NO.	LAST CAL.	CAL. FREQ.
<u>Barley Test Stand</u>	<u>TA3</u>	<u>—</u>	<u>—</u>
<u>Floke NVM 800A</u>	<u>530.314</u>	<u>6/75</u>	<u>12/</u>
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____
EQUIP. _____	SER. NO. _____	LAST CAL. _____	CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 10/20/75 INITIALS JSC
 PERFORMED BY J. Williams DATE 10/25/75 APPROVED BY M. S. Snyder DATE 10/30/75

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # DH3-L-1

Group 47

Component Name BWST - Level Alarm

Date

Remarks (History of Corrective Maintenance)

4/2/78 RECALIBRATED 10/7/78

10/25/78 Found Set Points changed, no cal sheet / TCN back to old Set Points LEE.

INST. NO. DH3-LI2

SER. NO. 756081

SYSTEM Decay Heat Removal FUNCTION Borated Wtr. Stor. Tk. Level

LOCATION CT2 Pnl. 8 MOD OR TYPE BMC RY120XX

TOLERANCE 1.0 % OF SPAN SPECIAL DATA _____

Item 8-82 (106F)

RANGE <u>0-56 Ft. Wtr. (+-10 VDC)</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT	<u>B&R Dwg. 2381</u>
ACTION <u>Ind.</u>	<u>Merc. PC-7604-106 BMC P/I E12-9</u>

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	-10	0	0						
2	-5	14	14						
3	0	28	28						
4	+5	42	42.1						
5	+10	56	56						

REMARKS _____

REVIEWED BY G.C.
K. Harner 11/2/76
G. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN .178

PERFORMED BY R. H. ... DATE 1/30/76

REVIEWED BY E. ... DATE 11-15-76
UE&C INST. SUP.

ACCEPTED BY R. T. Carlson DATE 3/25/77
UE&C START-UP

TEST EQUIPMENT

<u>BMC Test Unit E32</u>
<u>Weston Digital 202A1</u>

POOR ORIGINAL

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # D113-LI2

Group 47

Component Name BWST Level Invl

Date

Remarks (History of Corrective Maintenance)

10-5-77

Recal for SURVEILLANCE PROCEDURE 2302-R19

INST. NO. MS-TE-1096

SER. NO. 77167

SYSTEM MS Main Steam FUNCTION RC-H-1B Steam Outlet Temp.

LOCATION TBO MOD OR TYPE Rosemount RI 104WC35BX

TOLERANCE * % OF SPAN SPECIAL DATA MS-TT-1096 & MS-TI-1096

RANGE <u>Oper. Temp. 250-650°F</u>	REFERENCE DATA <u>Spec. #46</u>
OUTPUT	<u>B&R Dwg. #2002, 3090-5</u>
ACTION <u>Dual RTD</u>	

Calib. RTD

CALIB.	Calib. RTD			G & B			R & W		
	Resist. Ohms	Temp °F	Limit Error %	Resist. Ohms	Temp °F	Actual Error %	Resist. Ohms	Temp °F	Actual Error %
1	115.25	102.0	.606	115.39	102.3	.1	115.39	102.3	.1
2									
3	132.46	181.6	.845	132.63	182.0	.4	132.63	182.0	.4
4									
5									

REMARKS *R/T Table #2 REC Report 26826-D

REVIEWED BY Q. C.
K. Harvey 8-18-76
Q. C. ENGINEER DATE
NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN .473

PERFORMED BY A. Campbell EK DATE 5-10-74

REVIEWED BY E. K. Campbell DATE 8-19-76
UE&C INST. SUP.

ACCEPTED BY A. Littlefield DATE 10/18/77
UE&C START-UP

TEST EQUIPMENT

L&N Resist. Thermo Bridge	1771309
Rosemount RTD Model #104-1443-1	
Serial #92644	

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TE-1096

Group MS-98

Component Name RC-H-18 STEAM OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

SYSTEM Main Steame
 LOCATION C01 Cab 162
 TOLERANCE 2 mm ENG. UNIT
 OR 5 % OF SPAN
 MAX. ERROR OF % OF SPAN .05
 OR
 MAX. ERROR ENG. UNITS .02 mm
 STATIC PRESSURE ERROR na

INST. NO. MS-TT-1096
 SERIAL NO. _____
 MODEL OR TYPE RIS SC-370
 FUNCTION RC-H-LB Steam Outlet Temp
 RANGE 200-600°F
 OUTPUT 10-50 ma
 ACTION R/E converter

REFERENCE DATA RIS Product Instruction # 370
B.R. Print: 2370

SPECIAL DATA

CALIB.	INPUT CHMS	Desired Output	As Found	As Left	Error	% Error				
1	147.15	10 ma	7.57	10.00	0	0				
2	167.66	20 ma	19.59	20.01	.01	.025				
3	188.175	30 ma	29.60	30.01	.01	.025				
4	207.688	40 ma	39.70	40.02	.02	.05				
5	229.2	50 ma	49.59	50.02	.02	.05				
6										

REMARKS:

TEST EQUIPMENT USED

EQUIP. General Radio Resistor 1433 F SER. NO. 18373 LAST CAL. 3-6-78 CAL. FREQ. Ann.
 EQUIP. 3600A Fluke SER. NO. 0825091 LAST CAL. 7-5-78 CAL. FREQ. Ann.
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 10-27-78 INITIALS RHT
 PERFORMED BY Al Turner DATE 10-27-78 APPROVED BY J.P. [Signature] 10/27/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TT-1096

Group MS-98

Component Name PC-H-16 STEAM OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

10-29-78

Calibrated OK

INST. NO. MS-TS-1096

SER. NO. NA

SYSTEM Main Steam FUNCTION RC-H-1B Steam Outlet Temp.

LOCATION CT1 Cab 162 MOD OR TYPE Fox M/63R-0A

TOLERANCE NA % OF SPAN SPECIAL DATA _____

Signal From MS-TT-1096

RANGE	10-50 MA (250-650°F)	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2380,3090-5
ACTION	OOI At 42.5 MA (575°F)		Fox P/I 18-367

CALIB.									
1									
2	OOI	At	42.4	MA					
3	COD	At	42.3	MA					
4									
5									

REMARKS _____

REVIEWED BY Q. C.
K. Hammer 9-19-76
 Q. C. ENGINEER DATE
 NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN NA

PERFORMED BY *A. Campbell* VH/EK DATE 2-20-76

REVIEWED BY *E. Scudell* DATE 8-14-76
 UE&C INST. SUP.

ACCEPTED BY *H. Littlefield* DATE 10/17/77
 UE&C START-UP 3

TEST EQUIPMENT

Simpson E27
Fox Test Unit #3
Simpson Digital E78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TS-1096

Group MS-98

Component Name RC-H-10 STEAM OUTLET TEMP.

Date

Remarks (History of Corrective Maintenance)

INST. NO. MS-TI-1096

SER. NO. NA

SYSTEM Main Steam FUNCTION RC-H-1B Steam Outlet Temp.

LOCATION CT2 CON 5 MOD OR TYPE Sigma 2500

TOLERANCE 1.0 % OF SPAN SPECIAL DATA _____

Signal From MS-TT-1096

RANGE	25-65°F x 10 (10-50-MA)	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2002,2381,3090-5
ACTION	Ind.		

CALIB.	Input		Desired		Actual					
	MA	IND	IND	IND						
1	10	250	253	3.						
2	20	350	350							
3	30	450	450							
4	40	550	550							
5	50	650	650							

REMARKS _____

REVIEWED BY Q. C.
K. Harvey 9-19-76
Q. C. ENGINEER DATE
NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN .75

TEST EQUIPMENT

PERFORMED BY *VH* DATE 2-16-76

Current Calibrator #3

REVIEWED BY *E. S. Campbell* DATE 8-14-76
UE&C INST. SUP.

ACCEPTED BY *H. V. Littlefield* DATE 10/18/77
UE&C START-UP 4

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TE-1091

Group MS-98

Component Name RC-H-10 STEAM OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

INST. NO. MS-TE-1097

SER. NO. 77168

SYSTEM MS Main Steam FUNCTION RC-H-1A Steam Outlet Temp.

LOCATION TBO MOD OR TYPE Rosemount RI 104WC35BX

TOLERANCE * _____ % OF SPAN SPECIAL DATA To MS-TT-1097 & MS-TI-1097

RANGE	0-1200 °F Max. Oper Temp. 250-650°F	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2002.3090-5
ACTION	Dual RTD		

CALIB.	Calib. RTD			G&B			R&I		
	Resist. Ohms	Temp °F	Limit ± Error °F	Resist Ohms	Temp °F	Actual Error °F	Resist Ohms	Temp °F	Actual Error °F
1	115.17	101.6	.605	115.31	101.9	.3	115.31	101.9	.3
2									
3	132.57	182.1	.846	132.74	182.5	.4	132.74	182.5	.4
4									
5									

REMARKS *R/T Table #2 REC Report 26826-D

REVIEWED BY Q. C. *K. Harvey* 8-19-76
Q. C. ENGINEER ATE
NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN .495

PERFORMED BY *H. Campbell* EK DATE 5-10-74

REVIEWED BY *E. Scorsil* DATE 8-19-76
UE&C INST. SUP.

ACCEPTED BY *H. Littlefield* DATE 10/18/77
UE&C START-UP 5

L&N Resist. Thermo Bridge	1771309
Rosemount RTD	Model #104-1443-1
Serial #92644	

TEST EQUIPMENT

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TE-1097

Group MS-98

Component Name RC-H-7A OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

INST. CAL DATA SHEET

SYSTEM Main Steame
 LOCATION CBI C.L. 112
 TOLERANCE .2 ma ENG. UNIT
 OR .5 % OF SPAN
 MAX. ERROR OF % OF SPAN .05
 OR
 MAX. ERROR ENG. UNITS .02 ma
 STATIC PRESSURE ERROR _____

INST. NO MS-TT-1097
 SERIAL NO. _____
 MODEL OR TYPE RIS SC-370
 FUNCTION RC-14-1A Steam Outlet Temp
 RANGE 200-600°F
 OUTPUT 10-50 ma
 ACTION Temp. Transducer (R/I)

REFERENCE DATA Spec 46 RIS P/I 370
B:R Dwg. 2380

SPECIAL DATA _____

CALIB.	Input Resist	Desired Output	As Found	As Left	Error	% Error				
1	147.15	10 ma	10.15	9.98	-.02	.05				
2	167.662	20 ma	20.13	19.99	-.01	.025				
3	177.175	30 ma	30.13	29.99	-.01	.025				
4	202.688	40 ma	40.13	40.01	.01	.025				
5	224.20	50 ma	50.12	50.00	-					
6										

REMARKS: _____

TEST EQUIPMENT USED

EQUIP. General Radio Resistor 1433 F SER. NO. 12373 LAST CAL. 3-6-78 CAL. FREQ. Jan
 EQUIP. 260A Fluke SER. NO. 0875091 LAST CAL. 7-5-78 CAL. FREQ. Smith
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. - CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 10-27-78 INIT ALS [Signature]
 INFORMED BY Phil Turner DATE 10-27-78 APPROVED BY [Signature]

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MS-TT-1097

Group MS-98

Component Name RC-H-1A Steam Outlet Temp

Date

Remarks (History of Corrective Maintenance)

10-27-79 Calibrated OK

INST. NO. MS-TS-1097

SER. NO. NA

SYSTEM MS Main Steam FUNCTION RC-H-1A Steam Outlet Temp.

LOCATION CT1 CAB. 162 MOD OR TYPE Fox M/63R-0A

TOLERANCE NA % OF SPAN SPECIAL DATA _____

Signal From MS-TT-1097

RANGE	10-50 MA (250-650°F)	REFERENCE DATA	Spec. #46
OUTPUT		B&R Dwg.	# 2380,3090-5
ACTION	OOI At 42.5 MA (575°)	Fox P/I	18-367

CALIB.									
1									
2	OOI	At	42.5	MA					
3	COD	AT	42.4	MA					
4									
5									

REMARKS _____

REVIEWED BY Q. C.
G. Harvey 8-19-76
Q. C. ENGINEER A/E
NOT IN Q. C. SCOPE
TEST EQUIPMENT -

MAXIMUM ERROR IN PERCENT OF SPAN NA

PERFORMED BY *VH/EK* DATE 2-20-76

REVIEWED BY *S. Sandell* DATE 9-18-76
UE&C INST. SUP.

ACCEPTED BY *G. Littlefield* DATE 10/18/77
UE&C START-UP 7

Simpson E27
Fox Test Unit #3
Simpson Digital E78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # M5-TS-1097

Group M5-98

Component Name RC-H-1A STEAM OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

INST. NO. MS-TT-1097

SER. NO. NA

SYSTEM MS Main Steam FUNCTION RC-H-1A Steam Outlet Temp.

LOCATION CT2 CON 5 MOD OR TYPE Sigma 2500

TOLERANCE 1.0 % OF SPAN SPECIAL DATA _____

Signal From MS-TT-1097

RANGE	25-65°F x 10 (10-50 MA)	REFERENCE DATA	Spec. #46
OUTPUT			2002,2381,3090-5
ACTION	Ind.		

CALIB.	Input	Desired	Actual						
	MA	IND	IND						
1	10	250	251						
2	20	350	350						
3	30	450	450						
4	40	550	549						
5	50	650	650						

REMARKS _____

REVIEWED BY Q. C.
K. Harney 8-19-76
Q. C. ENGINEER DATE
NOT IN Q. C. SCOPE

MAXIMUM ERROR IN PERCENT OF SPAN .25

TEST EQUIPMENT -

PERFORMED BY *J. Campbell* VII DATE 2-16-76

REVIEWED BY *E. Campbell* DATE 8-14-76
UE&C INST. SUP.

ACCEPTED BY *M. Littlefield* DATE 10/18/77
UE&C START-UP 8

Current Calibrator #3

T.M.I. UNIT NO. 2
INST. CAL. DATA SHEET

J.O. 9459-02

INST. NO. AH-TE-5012

SER. NO. _____

SYSTEM RX. BLDG. AIR COOLING H&V FUNCTION R.C. Dr. Tank Area ambient temp

LOCATION RX. Bldg. RBO Dr.Tk.Area MOD OR TYPE Rosemount 78-0065-0001

TOLERANCE ± .5°F SPECIAL DATA Sig. to AH-YMTR-5017

RANGE	93.03-135.97	0-200°F	REFERENCE DATA	SPEC. 63
OUTPUT	Variable Res.		Johnson Dwg. 301, B&R 2041 & 2227	
ACTION				

CALIB.	TEST TEMP °F	ELEMENT RES.	CALC. TEMP °F	ERROR °F				
1	68	107.77	67.9	.1				
2	175.3	130.892	175.1	.2				
3								
4								
5								

REMARKS _____

MAXIMUM ERROR IN PERCENT OF TOL. 40 %

TEST EQUIPMENT

PERFORMED BY L. Littlefield DATE 11/19/77

L&N Res. Bridge 1771309

VIEWED BY NA DATE —
 UE&C INST. SUP.

Taylor Merc. Therm. 63F3039

ACCEPTED BY L. Littlefield DATE 12-5-77
 UE&C START-UP

Taylor Merc. Therm. 66F0731

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # MIS-7C-1097

Group MIS-98

Component Name RC-H-1A STEAM OUTLET TEMP

Date

Remarks (History of Corrective Maintenance)

INST. NO. AH-TE-5022

SER. NO. 45773

SYSTEM Rx. Bldg. Air Cooling H&V FUNCTION Rx. Bldg. El. 330' Ambient temp.

LOCATION Rx. Bldg. R1-16A MOD OR TYPE Rosemount 78-0065-0001

TOLERANCE ± .5°F SPECIAL DATA Sig. to AH-YMTR-5017

RANGE	93.03-135.97 = 0-200°F	REFERENCE DATA	Spec. 63
OUTPUT	Variable Res.	Johnson Dwg.	301, B&R 2041, 2228
ACTION			

CALIB.	TEST TEMP.	ELEMENT RES.	CALC. TEMP °F	ERROR °F				
1	32.3	100.14	32.64	.34				
2	70.5	108.273	70.2	.3				
3	210.8	138.29	211.1	.3				
4								
5								

REMARKS _____

MAXIMUM ERROR IN PERCENT OF TOL. 68

PERFORMED BY RT Carlson JR/TR DATE 12/19/77

REVIEWED BY NA DATE -
 UE&C INST. SUP.

ACCEPTED BY RT Carlson DATE 1-10-78
 UE&C START-UP

TEST EQUIPMENT

Thermometer 63F-3039
Thermometer 65F-0731
L&N Bridge 1771309

INST. NO. AH-TE-5023

SER. NO. _____

SYSTEM RX. BLDG. AIR COOLING H&V FUNCTION Rx. Bldg. El. 330' ambient temp

LOCATION RX. Bldg. RB1 R5 MOD OR TYPE Rosemount 78-0065-0001

TOLERANCE ± .5°F SPECIAL DATA Sig. to AH-YMTR-5017

RANGE	93.03-135.97	0-200°F	REFERENCE DATA	SPEC. 63
OUTPUT	Variable Res.		Johnson Dwg. 301, B&R 2041 & 2228	
ACTION				

CALIB.	TEST TEMP °F	ELEMENT RES.	CALC. TEMP °F	ERROR °F				
1	74.15	109.08	73.93	.28				
2	175	130.585	174.6	.4				
3								
4								
5								

REMARKS _____

MAXIMUM ERROR IN PERCENT OF TOL. 80%

PERFORMED BY *L. Littlefield* RDB/DCK DATE 11/19/77

VIEWED BY MA DATE —
 UE&C INST. SUP.

ACCEPTED BY *L. Littlefield* DATE 12.5.77
 UE&C START-UP

TEST EQUIPMENT

L&N Res. Bridge	1771309
Taylor Merc. Therm.	63F3039
Taylor Merc. Therm.	66F0731

SYSTEM MMI
 LOCATION RELAY ROOM
 RANGE _____ ENG. UNIT _____
 OR _____
 _____ % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. 10-2-0
 SERIAL NO. _____
 MODEL OR TYPE BAILEY ⁷¹ 6625050E1
 FUNCTION _____
 RANGE 0 TO +100mVDC
 OUTPUT -10VDC TO +10VDC
 ACTION SIGNAL CONVERTER H

REFERENCE DATA BAILEY INST. BOOK VOL 1B, SECT. 15, E 92-19-6
DWG - 0 - 807P486C

SPECIAL DATA

CALIB	DESIRED INPUT	DESIRED OUTPUT	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	0.0mV	-10.0	-9.789	-10.006					
2	20.0	-6.0	-5.189	-6.006					
3	40.0	-2.0	-1.787	-2.004					
4	60.0	+2.0	+2.012	+1.994					
5	80.0	+6.0	+6.017	+6.000					
6	100.0	+10.0	+10.019	+10.002					

REMARKS

TEST EQUIPMENT USED

EQUIP. DECADE BOX SER. NO. 18390 LAST CAL. 7/8/77 CAL. FREQ. 7/8/77
 EQUIP. FLUKE 8600A SER. NO. 530306 LAST CAL. 10/77 CAL. FREQ. 4/77
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY EIC _____ DATE 3/23/75 INITIALS GR
 FORMED BY [Signature] DATE 3/10/78 APPROVED BY [Signature] DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-UR-TT4

Group 148

Component Name Sig. Conv. H
10-2-8

Date

Remarks (History of Corrective Maintenance)

3/25/78 RECALIBRATED 3/10/78

SYSTEM NNI REACTOR COOLANT
 LOCATION CABLE ROOM (3-8-12)
 TOLERANCE .1 x 10 ENG. UNIT
 OR 1% % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-4A-T12
 SERIAL NO. _____
 MODEL OR TYPE BMC 6623.518-1
 FUNCTION R₂ OUTLET TEMP.
 RANGE ± 10 VDC
 OUTPUT 52-62°F x 10
 ACTION PH INDICATOR

REFERENCE DATA - SPEC 7
BMC INST E12-1-1
BMC DWG D8038486 C

SPECIAL DATA

CALIB.	INPUT VOLTS	DESIRED OUTPUT READING	AS FOUND OUTPUT	AS SET OUTPUT						
1	+10.0	62.0	61.7	62.0						
2	+6.0	60.0	59.6	60.0						
3	+2.0	58.0	57.7	58.05						
4	-2.0	56.0	55.4	56.05						
5	-6.0	54.0	53.85	54.0						
6	-10.0	52.0	52.0	52.0						

REMARKS:

TEST EQUIPMENT USED

EQUIP. DIGITEC 3110 SER. NO. 61260567 LAST CAL. 1/78 CAL. FREQ. 7/78
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 13 APR 78 INITIALS MPR
 PERFORMED BY MPR DATE 13 APR 78 APPROVED BY _____ DATE 4/13/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-44-TI2

Group 148

Component Name PM Indicator
3-8-13

Date

Remarks (History of Corrective Maintenance)

13 APR 78 RETALIARA

~~1-15~~ 1-15

SYSTEM UNI REACTOR COOLANT
 LOCATION CABLE ROOM (9-6-13)
 TOLERANCE .1x10 ENG. UNIT
1% OR
 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-4B-T12
 SERIAL NO. _____
 MODEL OR TYPE BMC 662J5/B-1
 FUNCTION Rx OUTLET TEMP
 RANGE ± 10 VDC
 OUTPUT 52-62°F x 10
 ACTION PH INDICATOR

REFERENCE DATA SPEC 7
BMC INST E12-1-1
BMC DWG D8038486C

SPECIAL DATA

CALIB.	INPUT VOLTS	DESIRED OUTPUT READINGS	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	+10.0	62.0	61.9	62.0					
2	+6.0	60.0	59.9	60.0					
3	+2.0	58.0	57.9	58.0					
4	-2.0	56.0	56.0	56.0					
5	-6.0	54.0	54.1	54.0					
6	-10.0	52.0	52.1	52.0					

REMARKS:

TEST EQUIPMENT USED

EQUIP. DIGITEC 3110 SER. NO. 61260567 LAST CAL. 1/78 CAL. FREQ. 7/7
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 13 APR 78 INITIALS JPR
 PERFORMED BY JPR DATE 13 APR 78 APPROVED BY [Signature] DATE 4/78

INST. CAL. DATA SHEET

SYSTEM REACTOR COOLANT
 LOCATION CABLE ROOM (4-9-7)
 TOLERANCE _____ ENG. UNIT
 OR _____
 .1 % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-4-TAT
 SERIAL NO. _____
 MODEL OR TYPE BMC 6620255-3
 FUNCTION RC UNIT TR
 RANGE 20VDC
 OUTPUT ±10VDC
 ACTION SUMMER

REFERENCE DATA SPEC 7
BMC INST. 092-6-2
BMC DOC D8038488C
 SPECIAL DATA NOT MAJOR CAL. SHEETS

CALIB.	INPUT DIMS	INPUT VOLTS	DESIRED OUTPUT VOLT	AS FOUND OUTPUT VOLT	AS LEFT OUTPUT VOLT				
1	<u>11</u> 12, 13, 14	10.00	10A	10A	10A				
2	<u>12</u> 11, 13, 14	10.00	-5.00	4.871	4.998				
3	<u>13</u> 11, 12, 14	10.00	-5.00	-5.674	-5.000				
4	<u>14</u> 11, 12, 13	10.00	10A	10A	10A				
5	<u>G0</u>	10.00	-10.00	-10.374	-9.999				
6	<u>BAL.</u>			3mV	1mV				

REMARKS: $G_1 = G_4 = 10A$ $G_2 = G_3 = 0.50$ $G_0 = 1.00$

TEST EQUIPMENT USED

EQUIP. BAILEY TEST STAND SER. NO. TA-3 LAST CAL. NA CAL. FREQ. NA
 EQUIP. WESTON 4444 SER. NO. 202191 LAST CAL. 12/77 CAL. FREQ. 6/
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 4/3/78 INITIALS [Signature]
 PERFORMED BY [Signature] DATE 4/3/78 APPROVED BY [Signature] DATE 11

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit TL

Component # RC4-TaT

Group 148

Component Name Summer
4-9-7

Date

Remarks (History of Corrective Maintenance)

4/3/78

RECALIBRATED

INST. CAL. DATA SHEET

SYSTEM REACTOR COOLANT
 LOCATION CABLE ROOM (4-9-5)
 TOLERANCE _____ ENG. UNIT
 OR ±0.5% % OF SPAN
 MAX. ERROR OF 1/2 OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RC-4-TAT
 SERIAL NO. _____
 MODEL OR TYPE BMC 6618550-1
 FUNCTION RC UNIT TR
 RANGE 200 DC
 OUTPUT ±10V DC
 ACTION SIGNAL INVERTER

REFERENCE DATA

SPEC 7
 BMC INST 092-27
 BMC DOC 03038488C

SPECIAL DATA

REF MODULE CAL SHEETS

CALIB.	INPUT VOLTS	DESIRED OUTPUT VOLTS	AS FOUND VOLTS	AS LEFT VOLTS					
1	+10.00	-10.00	-10.057	-10.000					
2	0.0	0.0	-0.051	+0.002					
3	-10.00	10.00	9.962	10.004					
4									
5									
6									

REMARKS: output gain is at mid.

TEST EQUIPMENT USED

EQUIP. BAILEY TEST STAND SER. NO. TA-3 LAST CAL. NA CAL. FREQ. NA
 EQUIP. WESTON 4444 SER. NO. 202191 LAST CAL. 12/77 CAL. FREQ. 6/77
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY

DATE 4/3/78 INITIALS gpc

PERFORMED BY gpc DATE 4/3/78 APPROVED BY _____ DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit TF

Component # PC4-TAT

Group 148

Component Name Sig. Inverter
4-7-5

Date

Remarks (History of Corrective Maintenance)

4/3/78

RECALIBRATED

INST. CAL DATA SHEET

SYSTEM Reactor Coolant
 LOCATION 372 Room 4
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 _____ 10 _____ % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. RPA-TR-1074-T
 SERIAL NO. NONE
 MODEL OR TYPE BMC IND-211X-3
 FUNCTION RC Unit Outlet Temp
 RANGE 7 10VDC
 OUTPUT _____
 ACTION Reminder

REFERENCE DATA Spec. 7, BJR Dwg 2381, BMC P/I E12-9Z

SPECIAL DATA

CALIB.	Input VDC	Desired mV	As Found	As LEFT						
1	-10	530	525	530						
2	-6	540	535	540						
3	-2	560	552	560						
4	+2	580	582	580						
5	+4	600	602	599						
6	+10	620	<620	620						

REMARKS: Set pt. For alarm 612°F H; Reset 608°F

TEST EQUIPMENT USED

EQUIP. Digital I/V source SER. NO. 61260567 LAST CAL. 10-30-78 CAL. FREQ. 6m
 EQUIP. Fluke 8600A SER. NO. 530288 LAST CAL. 10-16-78 CAL. FREQ. 6m
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 12-28-78 INITIALS TRG
 PERFORMED BY T.R. Hillert DATE 12-28-78 APPROVED BY [Signature] DATE 12/28/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC4-TR/RC4-TS

Group 149

Component Name Recorder

Date

Remarks (History of Corrective Maintenance)

1-9-78

REPAIRS MADE

Fix

12-25-78

Oil Lt

Test

INST. NO. RC5A-TE1/RC5A-TE2

SER. NO. 3675

SYSTEM Reactor Coolant FUNCTION RC Inlet Temp.

LOCATION RB1 30N-28W MOD OR TYPE REC 177HW

TOLERANCE * % OF SPAN SPECIAL DATA Dual Plat RTD

RANGE <u>520-620°F</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT <u>204-225 Ohms Approx.</u>	Dwg. <u>2452</u>
ACTION <u>Temp. Sensor</u>	RMT Man. <u>127311E</u>

CALIB.	Temp OF	(RTD Lead Resist)			Insul		Res	
		R-W	R-R	W-W	Res R-Gr	To Case		
1	80	110.8	1.0	1.0	Over 1000 M	Over 1000 M		
2		Gr-B1	Gr-Gr	B1-B1	B1-R			
3	80	110.9	1.0	1.0	Over 1000 M	"	"	
4								
5								

REMARKS Element # 1 Red-White
Element # 2 Blk. - Green 50-650°F Range 104-230 Ohms
* RMT Proc. 9712 Functional check

REVIEWED BY Q. C.
<u>E. Harvey</u> <u>4/22/77</u>
Q. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN *

PERFORMED BY J. Campbell DATE 9/18/75

REVIEWED BY E. Asmus DATE 5-6-77
 UE&C INST. SUP.

ACCEPTED BY RT Carlson DATE 7-22-77
 UE&C START-UP 1-20

TEST EQUIPMENT

Master Voltohmyst 9022113

Fluke 3560

Calibration Curve 620-0006-RC2A-TE1-

OFFICIAL COPY

Comp

Component

Remarks (History of Corrective

~~1-20~~

1-20

INST. CAL DATA SHEET

SYSTEM N.W. 2

INST. NO. AI-5A-771

LOCATION 2227 1500

SERIAL NO. _____

TOLERANCE 1 1/16 ENG. UNIT
OR
1 % OF SPAN

MODEL OR TYPE MODEL 4111

FUNCTION _____

MAX. ERROR OF % OF SPAN _____

RANGE 500 to 2000

OR
MAX. ERROR ENG. UNITS _____

OUTPUT 12000000000000000000

STATIC PRESSURE ERROR _____

ACTION TEMPERATURE BRIDGE

REFERENCE DATA Bull. Co. Pump D-0554570, SP107

SPECIAL DATA

CALIB.	TEMP	INPUT	DISCORP	STANDARD	AS SUPPL	ERROR	PERCENT			
1	520°	209.24	0.00	0.03	0.00	.13	.01			
2	470°	209.46	0.00	0.04	0.00	.12	.02			
3	360°	212.55	40.00	40.15	31.99	.13	.01			
4	330°	216.42	60.00	60.12	57.17	.12	.02			
5	600°	220.68	80.00	80.14	71.75	.14	.02			
6	620°	224.75	100.00	100.18	100.2	.15	.02			

REMARKS:

TEST EQUIPMENT USED

EQUIP. Standard Pump SER. NO. 1-403 LAST CAL. 3-20-75 CAL. FREQ. 1

EQUIP. 10000000000000000000 SER. NO. 42501 LAST CAL. 3-7-75 CAL. FREQ. 1

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

CHINERY HISTORY ENTRY: DATE 5-22-75 INITIALS UJ

PERFORMED BY E. L. Williams DATE 5-22-75 APPROVED BY _____ DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit IT

Component # RC - 5A - TT 1

Group 108

Component Name Rosemount Bridge
4-1-4

Date

Remarks (History of Corrective Maintenance)

3/25/78 CALIBRATION RECHECKED 3/12/78

5-22-78 calibrated as per W.R. 3726 Y.B.

148

SYSTEM PLANT
 LOCATION RELAY ROOM
 TOLERANCE 1 ENG. UNIT OR % OF SPAN
 MAX. ERROR OF % OF SPAN _____
 OR
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. 4-2-11
 SERIAL NO. _____
 MODEL OR TYPE BAILEY 3" 6625050E1
 FUNCTION _____
 RANGE 0 TO 100mVDC
 OUTPUT -10VDC TO +10VDC
 ACTION SIGNAL CONVERTER H

REFERENCE DATA BAILEY INST. BOOK VOL 18, SECT. 15, E 92-19-6
DWG. D-82394873

SPECIAL DATA

CALIB.	DESIRED INPUT	DESIRED OUTPUT	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	0.0mV	-10.0	-9.987	-10.003					
2	20.0	-6.0	-5.971	-6.006					
3	40.0	-2.0	-1.990	-2.006					
4	60.0	+2.0	+2.007	+1.991					
5	80.0	+6.0	+6.010	+5.994					
6	100.0	+10.0	+10.017	+10.001					

REMARKS:

TEST EQUIPMENT USED

EQUIP. DECADE BOX SER. NO. 18340 LAST CAL. 7/8/77 CAL. FREQ. 7/8/77
 EQUIP. FLUKE 8600A SER. NO. 530306 LAST CAL. 10/77 CAL. FREQ. 4/77
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY LIBRARY ENTRY DATE 3/21/78 INITIALS [Signature]
 PERFORMED BY [Signature] DATE 3/12/78 APPROVED BY [Signature] DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC 5A - TT 1

Group 148

Component Name Sin Cond H
4-2-11

Date

Remarks (History of Corrective Maintenance)

3/25/70 RECALIBRATED 3/12/70

INST. NO. RC5A-TI2

SER. NO. 717176

SYSTEM Reactor Coolant FUNCTION Reactor Inlet Temp Loop A

LOCATION CT2 Con. 4 MOD OR TYPE BMC RY 222XX

TOLERANCE .5 % OF SPAN SPECIAL DATA Left Side Dual Unit

RANGE <u>52-62 X 10⁰F (+-10 VDC)</u>	REFERENCE DATA <u>Spec. 7</u>
OUTPUT	
ACTION <u>Dual Ind.</u>	<u>BMC P/I E12-9-2</u>

CALIB.	Input VDC	Desired Ind	Actual Ind						
1	-10	52	52						
2	-5	54.5	54.5						
3	+0	57	57						
4	+5	59.5	59.5						
5	+10	62	62						

REMARKS _____

REVIEWED BY Q. C.
L. Harvey 4/22/77
Q. C. ENGINEER DATE

MAXIMUM ERROR IN PERCENT OF SPAN 0

TEST EQUIPMENT

PERFORMED BY *A. Campbell* NH/GH DATE 10/1/76

REVIEWED BY *E. Sandahl* DATE 5-3-77
UE&C INST. SUP.

ACCEPTED BY *RT Carlson* DATE 7-22-77
UE&C START-UP

Weston 202191
Lambda P/S

OFFICIAL COPY

1-23

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MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit TL

Component # RC5A-TI2

Group 148

Component Name RY Console Ind.

Date

Remarks (History of Corrective Maintenance)

~~1-23~~ 1-23

SYSTEM NMI INST. NO. 4-1-5 14
 LOCATION RELAY ROOM SERIAL NO. 2182
 RANGE _____ ENG. UNIT _____ MODEL OR TYPE ROSEMOUNT 4147 IF
 OR _____ OR _____ FUNCTION _____
 % OF SPAN _____ RANGE 50° - 650°
 MAX. ERROR OF % OF SPAN _____ OR _____ OUTPUT 0 to 100 mV
 MAX. ERROR ENG. UNITS _____ ACTION TEMPERATURE BRIDGE
 STATIC PRESSURE ERROR _____

REFERENCE DATA SPEC 7
1372 DMC 2340

SPECIAL DATA RELAY INST ROOM, VOL 10, SPEC 19.

CALIB.	TEMP °F	INPUT OHMS	DESIRED OUTPUT	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	50°	104.15	0.0 mV	-0.07	-0.01					
2	170°	130.48	20.0	19.96	19.99					
3	290°	152.30	40.0	40.00	40.01					
4	410°	181.62	60.0	60.05	60.02					
5	530°	206.44	80.0	80.06	80.02					
6	650°	230.77	100.0	100.07	100.03					

REMARKS:

TEST EQUIPMENT USED

EQUIP. DECADE BOX SER. NO. 18397 LAST CAL. 2/78 CAL. FREQ. 2/7
 EQUIP. FLAKE 8000A SER. NO. 530306 LAST CAL. 10/77 CAL. FREQ. 4/7
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 3/23/78 INITIALS ATC
 PERFORMED BY J. Lawrence DATE 3/12/78 APPROVED BY [Signature] DATE 3/12/78

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC-5A-TT2

Group 148

Component Name Rosemount Bridge
4-1-5

Date

Remarks (History of Corrective Maintenance)

2/25/78

RECALIBRATED 3/12/78

~~1-24~~

1-24

SYSTEM NEIL
 LOCATION RELAY ROOM
 TOLERANCE _____ ENG. UNIT _____
 OR _____
 % OF SPAN _____
 MAX. ERROR OF % OF SPAN _____
 OR _____
 MAX. ERROR ENG. UNITS _____
 STATIC PRESSURE ERROR _____

INST. NO. 4-3-1
 SERIAL NO. _____
 MODEL OR TYPE BAILEY " 602505061
 FUNCTION _____
 RANGE 0 TO +100mVDC
 OUTPUT -10VDC TO +10VDC
 ACTION SIGNAL CONVERTER H

REFERENCE DATA BAILEY INST. BOOK VOL 18, SECT. 15, E 92-19-6
PLUG # 9038497-C

SPECIAL DATA

CALIB.	DESIRED INPUT	DESIRED OUTPUT	AS FOUND OUTPUT	AS LEFT OUTPUT					
1	0.0mV	-10.0	-9.939	-9.996					
2	20.0	-6.0	-5.711	-5.996					
3	40.0	-2.0	-1.883	-1.996					
4	60.0	+2.0	+2.146	+2.006					
5	80.0	+6.0	+6.172	+6.005					
6	100.0	+10.0	+10.196	+10.000					

REMARKS:

TEST EQUIPMENT USED

EQUIP. DECADE BOX SER. NO. 18390 LAST CAL. 7/8/77 CAL. FREQ. 7/8/77
 EQUIP. FLURE 8600A SER. NO. 530306 LAST CAL. 10/77 CAL. FREQ. 4/77
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____
 EQUIP. _____ SER. NO. _____ LAST CAL. _____ CAL. FREQ. _____

MACHINERY HISTORY ENTRY DATE 3/20/78 INITIALS [Signature]
 PERFORMED BY [Signature] DATE 3/12/78 APPROVED BY [Signature] DATE _____

MACHINERY HISTORY CARD (I&C/MEC/ELEC)

Unit II

Component # RC 5A - TT 2

Group 148

Component Name Sig. Conv. H
4-3-1

Date

Remarks (History of Corrective Maintenance)

3/25/74 RECALIBRATED 3/12/78