CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

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NONCONFORMANCE REPORT

Project No. 20-01402-571 **NCR No.** 2001-11

PART 1: DESCRWTION OF NONCONFORMANCE:
Keithley electrometer 735984 Model # 6517A (Asset number 007670) was found to be out of tolerance during a normally scheduled calibration.

Initiated by: Darrell S. Dunn **Date:** 6/6/2001

PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

Disposition:
Accept data obtained in tests using this electrometer as is.

Basis of Disposition:
The electrometer was found to be out of tolerance on one range of the voltage source function. This function is not used during the measurement of parameters for any activity or tests conducted in the laboratory. The electrometer was found to be in tolerance for all parameters that are used in laboratory tests. Consequently the out of tolerance condition will not adversely affect the parameters measured during testing.

Action to Correct Nonconformance:
None. The calibration cycle for this instrument will be retained as is.

Target date for completion: 6/16/2001

Proposed by: Darrell S. Dunn **Date:** 6/6/2001

PART 3: APPROVAL

Element Manager: **Date** 6/6/01

Director of QA: **Date** 6/8/2001

Comments/Instructions:
N/A

PART 4: CLOSE OUT

Comments: No further actions required.

Verified by: **Date:** 6/8/2001

Distribution:
QA Records - NCR Folder
D. Dunn
Element Managers
B. Sagar, H. Garcia, B. Mabrito
M. Ehnstrom

CNWRA FORM *QAP* 9-1

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OUT OF TOLERANCE

SOUTHWEST RESEARCH INSTITUTE
CALIBRATION LABORATORY
MEMORANDUM

June 4, 2001

To: DARRELL DUNN DIV20 B57

From: Walt Hill, Supervisor WH
Institute Calibration Laboratory

Subject: Calibration by an approved supplier

Manufacturer/Model: KEITHLEY 6517A
Description: ELECTROMETER
Serial Number: 0735984
Asset Number: 007670
Work Order Number: 444043743
Date Calibrated: May 31, 2001
Remarks: ROTHE CERT # 30280:991323923

Supplier: ROTHE DEVELOPMENT, INC., SAN ANTONIO, TX

The above item **was** sent to **an** approved supplier who is listed on the SwRI Approved Suppliers List (ASL). This supplier is qualified to supply a product or service in support of project activities that require the use of approved suppliers. Please notify the Institute Calibration Laboratory, extension 5215, of any discrepancies with the item or calibration documentation.

Attachment(s) 7

m\asl1.rpt Rev 8 January 01

OUT OF TOLERANCE

CERT. NUMBER
30280:991323923

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ROTHE DEVELOPMENT, INC.

METROLOGY SERVICES DIVISION

4614 SINCLAIR RD., SAN ANTONIO, TEXAS 78222 PH:210-648-3131

CERTIFICATE OF CALIBRATION

ISSUED TO: Southwest Research Institute
(30)
6220 Culebra
San Antonio, TX 78284

MFG: Keithley
MODEL 6517A
NOMEN: Electometer
S/N: 0735984
CUST. ID:

CALDATE: 5/31/2001
DUE DATE: 5/31/2002

CONTROLNO.: 103 - 30280
TECHNICIAN 7
SPECIFICATIONS: MFG
PROCEDURE MFG
WORKORDER 002012766
CUSTOMER P.O.: 01571R/ST384840/20.00760
RECEIVED CONDITION OUT OF TOLERANCE
RETURNED CONDITION IN TOLERANCE

CALIBRATIONPERFORMED AT: RDMSD
CALIBRATIONINTERVAL 12Mo.
TEMPERATURE 72.0 °F
RELATIVE HUMIDITY: 37 %

DATE RECEIVED 5/31/2001

COMMENTS

ATTACHMENTS: CALIBRATION DATA 6 SHEETS

All Calibrations performed at Rothe Development, Inc. Metrology Services Division meet the requirements of ANSI/NCSL Z540-1-1994, ISO/IEC GUIDE 25, and ISO 10012-1, and are traceable to the National Institute of Standards and Technology. The collective uncertainty of the measurement(s) does not exceed 25% (TUR≥4:1) of the instrument specification(s) unless noted in the COMMENTS section.

TR#	MFG	MODEL	SERIAL NO.	DUE DATE
20	FLUKE	5700A/EP	4605002	6/21/2001
256	FLUKE	5725A	6585002	6/21/2001
231	HP	34401A	3146A45255	7/3/2001
75	JRL	NMN	75	1/22/2002
235	GUILDLINE	6500A	59660	11/1/2001
100	FLUKE	5500A	6320016	9/15/2001

APPROVED BY: Peter A Stemmer ☑ CMS ☐ QCO **DATE:** 5/31/2001

RDMSD 1001
08/97

This certificate may not be reproduced, except in full, without written approval of Rothe Development, Inc. Metrology Services Division.

ROTHE DEVELOPMENT METROLOGY SERVICES

CALIBRATION DATA: KEITHLEY MODEL 6517A ELECTROMETER

CUSTOMER: Southwest Research Institute
WO NUMBER: 002012766
SERIAL: 0735984
CUST ID:

DATE: May 31 2001
TECH: MLO
INST NO: 30280

CALIBRATION DATA TAKEN — INCOMING ✓ — OUTGOING

CONDITION OF EQUIPMENT — IN TOLERANCE — OUT OF TOLERANCE ✓ *

DC VOLTAGE ACCURACY

RANGE	INPUT	MIN	READING	MAX
2 V	+1.9 V	1.89949	1.90025	1.90052
	-1.9 V	1.89949	1.90025	1.90052
20 V	+19 V	18.9950	18.9973	19.0050
	-19 V	18.9950	18.9973	19.0050
200 V	+190 V	189.883	189.923	190.117
	-190 V	189.883	189.923	190.117

DC CURRENT ACCURACY

RANGE	INPUT	MIN	READING	MAX
20 pA	19 pA	18.8070	18.9645	19.1930
200 pA	190 pA	188.095	189.970	191.905
2 nA	1.9 nA	1.89590	1.90150	1.90410
20 nA	19 nA	18.9615	19.0135	19.0385
200 nA	190 nA	189.615	190.047	190.385
2 UA	1.9 uA	1.89800	1.90090	1.90200
20 uA	19 uA	18.9805	18.9992	19.0195
200 uA	190 uA	189.805	189.973	190.195
2 m	1.9 mA	1.89800	1.90029	1.90200
20 mA	19 mA	18.9805	18.9972	19.0195

DOC.DATE: 5/31/2001

COULOMBS ACCURACY

RANGE	INPUT	MIN	READING	MAX
2 nC	1.9 nC	1.89235	1.90126	1.90765
20 nC	19 nC	18.9235	18.9825	19.0765
200 nC	190 nC	189.235	18.9576	190.765
2 uC	1.9 uC	1.89235	1.89555	1.90765

RESISTANCE ACCURACY

RANGE	INPUT	READING TOLERANCES >1.00000	<.999999	READING
2 MQ	1.00000	±126 C	±1260 C	1.00012
20 MQ	10.0001	±126 C	±1260 C	10.0003
200 MQ		±151 C	±1510 C	100.040
2 GQ	1.00190	±226 C	±2260 C	1.00177
20 GQ	9.97940	±226 C	±2260 C	9.96532
200 GQ	98.8080	±351 C	±3510 C	98.6178
2 TQ	994.370	±351 C	±3510 C	994.206

VOLTAGE SOURCE ACCURACY

SOURCE RANGE	OUTPUT	MIN	READING	MAX
±100 V	0.000 V	-0.01	0.03	0.01 *
	+25.000 V	24.9525	25.0340	25.0475
	+50.000 V	49.915	50.037	50.085
	+75.000 V	74.8775	75.0358	75.1225
	+100.000 V	99.840	100.038	100.160
	-25.000 V	24.9525	24.9615	25.0475
	-50.000 V	49.915	49.944	50.085
	-75.000 V	74.8775	74.9235	75.1225
	-100.000 V	99.840	99.905	100.160
±1000 V	+250.00 V	249.525	249.993	250.475
	+500.00 V	499.150	499.974	500.850
	+750.00 V	748.775	749.966	751.225
	+1000.00 V	998.40	999.95	1001.60
	-250.00 V	249.525	249.941	250.475
	-500.00 V	499.150	499.917	500.850
	-750.00 V	748.775	749.900	751.225
	-1000.00 V	998.40	999.87	1001.60

INST NO: 30280

✓ INCOMING
___ OUTGOING

DOC.DATE: 5/31/2001

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TEMPERATURE AND HUMIDITY TURN ON = MENU / GENERAL / A/D CONTROLS / DATE-STAMP / A OR v

TEMPERATURE ACCURACY

TEMP	MIN	READING	MAX
-25° C	-23.4	-24.6	-26.6
0° C	-1.5	0.4	+1.5
50° C	48.3	50.2	51.7
100° C	98.2	100.0	101.8
150° C	148.0	150.1	152.0

HUMIDITY ACCURACY

VOLTAGE INPUT	MIN	READING	MAX
0.000 V	0	0	1 %
0.250 V	24	25	26
0.500 V	49	50	51
0.750 V	74	75	76
1.000 V	99	100	101

INST NO: 30280

DOC.DATE: 5/31/2001

✓ INCOMING
OUTGOING

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ROTHE DEVELOPMENT METROLOGY SERVICES

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CUSTOMER: Southwest Research Institute
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DATE: May 31 2001
TECH: MLO
INST NO: 30280

CALIBRATION DATA TAKEN

INCOMING
OUTGOING ✓

CONDITION OF EQUIPMENT

IN TOLERANCE ✓
OUT OF TOLERANCE

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	+50.000 V	49.915	50.005	50.085
	+75.000 V	74.8775	75.0034	75.1225
	+100.000 V	99.840	100.038	100.160
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