

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

NONCONFORMANCE REPORT

Project No. 20.06002.01.322

NCR No. 2005-09

PART 1: DESCRIPTION OF NONCONFORMANCE:

Thermometer (Model: Kessler ASTM 1C, Serial Number: 115749, Asset Number: 003247) was found to be out of tolerance during a normally scheduled calibration.

Initiated by: Darrell S. Dunn

Date: 3/29/2005

PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

Disposition:

Accept data obtained in tests using this thermometer as is.

Basis of Disposition:

Mercury separation occurs when the thermometers are incorrectly stored and does not occur during normal use.

Calibration of the thermometer could not be performed. Calibration records indicate that the unit was received with mercury separation and attempts to remove bubbles in the mercury column were not successful. The thermometer was used to record temperature for two corrosion potential tests. These tests are documented in Scientific Notebook 571 Page 38, conducted from 3/12/03 to 5/27/03, and in Scientific Notebook 577 Page 52, conducted from 7/15/03 to 7/24/03. Test documented in Scientific Notebook 571 Page 38 was conducted using thermally oxidized specimens. A corresponding test using polished specimens was conducted simultaneously and documented in Scientific Notebook 571 Page 40. As expected, similar values of corrosion potential were obtained for both the polished and thermally oxidized conditions. In addition, the temperature of the test was maintained using temperature controllers with RTDs. Although the temperature controllers and RTDs are not calibrated, the temperature readings are consistent with temperatures measured using calibrated thermometers.

The test documented in Scientific Notebook 577 Page 52 was conducted to evaluate the effect of temperature on the corrosion potential. The notebook entry indicates the thermometer SN 115749 was replaced by thermometer SN C96-852. No basis for the replacement is provided. This test were performed over a period of a few days at temperatures in the range of 25 to 95 °C (7/15/03 to 7/24/03). The test time was not sufficient to reach steady state values of corrosion potential. Data acquired in the test documented in Scientific Notebook 577 Page 52 has not been used in the development of corrosion models because the duration of the test was insufficient. As a result, additional tests are being conducted to evaluate the effect of temperature.

Action to Correct Nonconformance:

The thermometer was removed from service.



Target date for completion: 4/11/2005

Proposed by: Darrell S. Dunn

Date: 3/31/2005

PART 3: APPROVAL

Element Manager: 

Date: 4/8/2005

Director of QA: 

Date: 4/8/05

Comments/Instructions:

PART 4: CLOSE OUT *Thermometer has been removed from service and from the recall list. Thermometer is now identified as being "inactive." No further action required. (Detached SwI Cal. Lab. asset list)*

Comments: *"active" SwI Calibration Laboratory*

Verified by: *M. R. Elstrom* Date: *4/25/05*

Distribution:

SOUTHWEST RESEARCH INSTITUTE

6220 CULEBRA ROAD • POST OFFICE DRAWER 28510 • SAN ANTONIO, TEXAS, 78228-0510 • TEL (210) 522-5215 • FAX (210) 522-3692

To: Darrell Dunn, Div. 20/ Bldg. 57

From: Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Date: Jan. 15, 2004

Subject: Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

When the as-found results are near the specification limit, +/- a margin less than the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. It is the Institute Calibration Laboratory policy that the client is made aware of this situation because the end-user is taking some of the risk that the instrument listed below may not meet the end-user measurement requirements.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

Manufacturer: Kessler **Model:** ASTM 1C

Description: Thermometer **Serial Number:** 115749

Asset Number: 3247 **User ID Number:** None

Last Calibration: Jan. 13, 2003

Date Received for Service: Jan. 14, 2004 **Work Order Number:** 444056977

Service Requested: Scheduled calibration

Remarks: Unit received with mercury separation. Attempts to merge mercury failed. Unable to record repeatable as found data. Thermometer will be disposed of per customer's decision.

OUT OF TOLERANCE

NCR * 2005-09	003247	DARRELL DUNN	KESSLER	ASTM 1C	THERMOMETER	115749	I
	003248	DARRELL DUNN	KESSLER	ASTM 1C 76MM	THERMOMETER	115814	I
	003778	DARRELL DUNN	KESSLER	ASTM 82C	THERMOMETER	32922	I
	004092	DARRELL DUNN	PROTO	6104	TORQUE SCREWDRIVER	314047	I
NCR * 2005-05	004199	DARRELL DUNN	TROEMNER	200G	WEIGHT, CLASS 1	63813	I
	004313	DARRELL DUNN	KEITHLEY	6517	ELECTROMETER	0599913	I
NCR * 2005-04	004987	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C96-616	I
	004989	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C96-649	I
	004992	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C96-727	I
	004994	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C96-784	I
	004996	DARRELL DUNN	FISHER SCIENTIFIC	15041C	THERMOMETER	9253474	I
	005434	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C96-783	I
	007168	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	C98-101	I
	007298	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	H98-149	I
	007299	DARRELL DUNN	FISHER SCIENTIFIC	15-166A	THERMOMETER	H98-168	I
007300	DARRELL	FISHER	15-166A	THERMOMETER	H98-180	I	