

# CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

## NONCONFORMANCE REPORT

Project No. 20.06002.01.322

NCR No. 2005-04

### PART 1: DESCRIPTION OF NONCONFORMANCE:

Thermometer (Model: 15-166A, Serial Number: C96-649, Asset Number: 004989) was found to be out of tolerance during a normally scheduled calibration.

Initiated by: Darrell S. Dunn

Date: 3/22/2005

### PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

#### Disposition:

Accept data obtained in tests using this thermometer as is.

#### Basis of Disposition:

The scale on the thermometer was not readable below 30 °C but was in intolerance at temperatures of 50 °C and higher. The thermometer has specified limits of +/- 0.5 °C and was used in corrosion tests conducted that have requirements of +/- 2 °C. Contrary to the SwRI Calibration Laboratory out of tolerance report, the degree markings are engraved in the body of the thermometer and are visible. The thermometer was immersed in deionized water with two recently calibrated thermometers (Thermometer #1 Serial Number: A2000-130, Model: 15-166A, Asset number: 008109, Calibrated 1/10/2005, Due 7/10/2005, and Thermometer #2 Serial Number: 183303, Model: 14-983-10B, Asset number: 002469, Calibrated 1/6/2005, Due 7/6/2005). All three thermometers read 22 °C. This simplified comparison test indicates the thermometer readings are accurate at temperatures below 50 °C

#### Action to Correct Nonconformance:

The thermometer will be removed from service.

Target date for completion: 4/11/2005

Proposed by: Darrell S. Dunn

Date: 3/22/2005

### PART 3: APPROVAL

Element Manager: 

Date: 3/22/2005

Director of QA: 

Date: 3/23/2005

Comments/Instructions:

### PART 4: CLOSE OUT

Distribution:

Comments: Thermometer has been removed from service and from the "active" SwRI Calibration Laboratory recall list. Thermometer identified as being "inactive." No further action required. (See attached list.)

Verified by: 

Date: 4/25/05

**To:** Darrell Dunn, Div 20, Ext 6090**From:** Walt Hill, Metrology Group Leader  
Institute Calibration Laboratory**Date:** Jan. 06, 2005**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:** Fisher Scientific**Model:** 15-166A**Description:** Thermometer**Serial Number:** C96-649**Asset Number:** 4989**User ID Number:****Last Calibration:** Jan 14, 2004**Date Received for Service:** Jan. 03, 2005 **Work Order Number:** 444062202**Service Requested:** Scheduled calibration**Remarks:** Unit is unreadable below 30 Degrees C.**OUT OF TOLERANCE**

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	444062202	Mfr.	Fisher-Scientific	Technician	blt
Asset No.	004989	Model	15-166A (ASTM 1C)		
Serial No.	C96-649	Type.	THERMOMETER	Cal Date.	06-Jan-05
Remarks:	Accuracy Reference ANSI Z236.1-1983				
RETURNED TO USER UNCALIBRATED					

Function/Range	Test Point	TI Reading	Difference	+/-Limit	+/-Uncertainty	Found/Left
Temperature	°C	°C	°C	°C	°C	Result
		Unreadable	#VALUE!	0.5	0.12	#####
		Unreadable	#VALUE!	0.5	0.12	#####
	50.0	50.5	0.5	0.5	0.12	Pass
	99.9	100.0	0.1	0.5	0.12	Pass
	150.0	150.2	0.2	0.5	0.12	Pass
END OF REPORT						

# 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, Ext 6090  
**From:** Institute Calibration Laboratory  
**Date:** January 6, 2005  
**Subject:** Returned Equipment

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The equipment described below is being return "as is" for the reason(s) indicated. The Institute Calibration Laboratory is not responsible to the customer for calibration status or condition. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

Unit Received: January 3, 2005    Work Requested: Scheduled calibration

Manufacturer: Fisher Scientific    Model: 15-166A    Description: Thermometer

Serial Number: C96-649    Asset Number: 4989    User ID Number:

Reason for return without calibration or repair:

- ☐ Requested by the owning organization.
- ☐ Required accessories or items listed in remarks were not provided.
- ☐ Lack of technical data.
- ☐ Parts are no longer available.
- ☐ Lack of support by manufacturer.
- ☒ Other

Remarks: The markings are unreadable below 20 Degrees C and marginal below 30 Degrees C. Unable to calibrate.

  
Walt Hill, Metrology Group Leader  
Institute Calibration Laboratory

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
NCR * 2005-05	004092	DARRELL DUNN	PROTO	6104	TORQUE SCREWDRIVER	314047	I
	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