



engineering and constructing a better tomorrow

June 30, 2008

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk, Washington, D.C. 20555-0001

Subject: **Nonconformance Number 99901368/2007 - 201 Resultant From an Audit of The University of Texas at Austin – Reply To a Notice of Nonconformance, Docket Number 99901368**

Dear Sirs:

This document presents the Reply To a Notice of Nonconformance for a Nonconformance of an audit conducted October 4-5, 2007 at the University of Texas by the Nuclear Regulatory Commission (NRC) designated as Docket Number 99901368 and Inspection Report Number 2007-20. The Corrective action is presented as an attachment to this letter and consists of actions planned and implemented by the University of Texas personnel in the Geotechnical Laboratory with the assistance of MACTEC. Attached are:

- o Procedure for Data Recording and Storage
- o Typical temperature and humidity recording data copy
- o Calibration documentation for temperature and humidity recorder
- o Reply to a Notice of Nonconformance.

This information was presented by the University of Texas to MACTEC to provide to the NRC. The corrective actions have been implemented for several months beginning on or about April 9, 2008.

If there are any questions please do not hesitate to contact John E. Lynch at (404) 817-0179 of MACTEC or Dr. Kenneth Stokoe at (512) 232-3686 of the University of Texas.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

  
John E. Lynch  
Principal

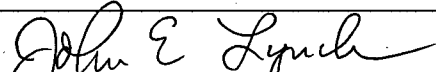
Enclosures: Reply to a Notice of Nonconformance

*IE09  
NR0*

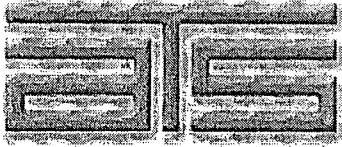
cc: Juan D. Peralta, Chief Quality and Vendor Branch 1  
Division of Construction Inspection & Operational Programs  
Office of New Reactors

Dr. Kenneth H. Stokoe  
Geotechnical Engineering Center  
University of Texas at Austin  
1 University Station C1792  
Austin TX 78712-0273

MACTEC Document Control Center, DCN VGCOL-516

MACTEC No: Atl -10-07; NRC No: 99901368/2007-201-01	<b>Reply to a Notice of Nonconformance and          Corrective Action Report</b>	
Organization: University of Texas at Austin; Soils Dynamic Laboratory	Location: Austin, TX	
Reported By: Nuclear Regulatory Commission in an audit conducted on Oct 4-5,2007		Date: October 5, 2007
<b>Nonconformance</b>		
<p>Description of Nonformance:          Criterion XIII, "Handling, Storage, and Shipping," of Appendix B to 10 CFR Part 50, states in part that, "When necessary for particular products, special protective environments, such as inert gas atmosphere, specific moisture content levels, and temperature levels, shall be specified and provided."</p> <p>MACTEC Engineering and Consulting, Inc., Quality Assurance Project Document (QAPD) states, in part, that the requirements of Subpart 2.20 of NQA-1-1994, titled "Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants," were applicable to the Geotechnical Engineering Center's Soil Dynamics Laboratory scope of work. Subsection 5.2.3 of NQA-1-1994 states, in part, that undisturbed samples shall be stored in a controlled environment in which the ambient temperature and humidity are maintained at predetermined levels.</p> <p>Contrary to the above:</p> <p>During the tour of the Geotechnical Engineering Center's Soil Dynamics Laboratory facilities, the NRC inspectors observed that the laboratory does not monitor temperature and humidity controls for the soil samples, as required in the MACTEC's QAPD. This issue has been identified as Nonconformance 99901368/2007-201-01 by the NRC.</p>		
Representative Notified: John Lynch of MACTEC and Dr. Kenneth Stokoe of University of Texas		
Date Notified: Verbally notified on Oct 5, 2007 and by written Inspection Report No: 99901368/2007-201 dated Dec 11, 2007		
<b>Corrective Action Plan</b>		
<p>Description of Corrective Actions (current and to prevent recurrence):</p> <p>Corrective actions consisted of the identification of a recording device which could be used in the laboratory to record temperature and humidity. An Extech Model RH520 was identified as an appropriate recorder. This recorder was purchased by the University of Texas. The receiving inspection and approval of the recorder for use was a successful calibration performed by a calibration laboratory which was accredited by A2LA for temperature and humidity measurements. Applied Technical Services was the accredited laboratory identified to perform the calibration of the RH 520 recorder. Attachment A presents the calibration certificate for the RH 520. In addition, the University of Texas prepared a procedure for the proper use of the RH 520 recorder (Provided as Attachment B).</p>		
<p>Actions to Prevent Recurrence:</p> <p>A procedure (Attachment B) has been and is being implemented at the University of Texas. A typical example of the data recording (Attachment C) is included to show implementation of the procedure.</p>		
Estimated Completion Date: Corrective Action is being implemented at the University of Texas beginning on or about April 9, 2008.		
<b>Corrective Action Closure</b>		
Comments: Corrective Action has been implemented properly as evidenced by Attachments A, B, and C.		
Approval Signature: 	Date: 7/1/08	

ATTACHMENT A



**Applied Technical Services**  
**Certificate of Calibration**  
 Certificate #46663



**Customer:**  
 University of Texas  
 Central Receiving  
 2200 Comal St.  
 Austin, TX 78713

**Calibration Location:**  
 Applied Technical Services  
 1049 Triad Court  
 Marietta, GA 30062

**Instrument Information:**

**Manufacturer:** Extech  
**Model Number:** RH520  
**Description:** Temp/Humidity Recorder  
**Asset Number:** CH05770  
**Serial Number:** CH05770  
**PO Number:** ES7109 - 2008A29062

**Calibration Information/Results:**

**As Found Condition :** In Tolerance  
**Action Taken/ As Left:** In Tolerance - No Adjustment  
**Temperature:** 68° F  
**Humidity:** 40% RH  
**Calibration Date:** 03/31/2008  
**Calibration Due Date:** 03/31/2009  
**Calibration Interval:** 12 Months

**Calib. Procedure:** ATS-1021 Rev 2: Calibration of Temperature & Humidity Meters

This instrument has been calibrated using primary or secondary standards whose calibration is traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST). Some measurements are traceable to natural, physical constants, consensus standards, or ratio type measurements.

The reported expanded measurement uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a confidence level of approximately 95%. The expanded measurement uncertainty is not considered when determining in-tolerance or out-of-tolerance conditions. The accuracy/tolerance is specified by the customer.

**Calibration Equipment Utilized**

Standard I.D.	Mfg.	Model No.	Description	Serial	Cal. Date	Due Date
ATS-09224	Hart Scientific	1502/5614	Display with PRT Probe	74866/757149	12/18/2007	12/18/2008
ATS-4096	Vaisala	HM141	Temperature Humidity Meter	T2750205	10/15/2007	10/15/2008

**Calibration Data**

FUNCTION TESTED	Nominal Value	As Found	As Left	Out of Tol	CALIBRATION TOLERANCE
Temperature Accuracy	34.59 °F	35.00	Same		33.59 to 35.59 °F [EMU 0.30 %]
"	89.65 °F	90.00	Same		88.66 to 90.65 °F [EMU 0.12 %]
"	119.65 °F	120.00	Same		118.66 to 120.65 °F [EMU 0.087 %]
Temperature @ Ambient	69.36 °F	70.00	Same		68.36 to 70.36 °F [EMU 0.15 %]
Humidity Accuracy	21.50 %RH	19.00	Same		18.50 to 24.50 %RH [EMU 2.3 %]
"	41.50 %RH	39.00	Same		38.50 to 44.50 %RH [EMU 2.3 %]
"	83.40 %RH	81.00	Same		80.40 to 86.40 %RH [EMU 2.3 %]
Humidity @ Ambient	41.50 %RH	39.00	Same		38.50 to 44.50 %RH [EMU 2.3 %]

Calibrated By: Miles, Brian K

Technician

Name

Title

All calibrations are performed in accordance with the ATS Quality Manual QM1, Rev 7 dated July 7, 2006. Applied Technical Services, Inc.'s Quality System complies with the applicable requirements of ANSI/NCCL Z540-1, ISO 9001-2000, 10CFR50 Appendix B, 10CFR Part 21, and ISO/IEC 17025. ATS is an ISO/IEC 17025 Accredited Calibration Laboratory through A2LA. The reported data is valid only at the time of the test and related only to the item calibrated. \*Calibration due dates appearing on this Certificate and calibration label are determined by the client and do not imply continued conformance to specifications. This certificate shall not be reproduced except in full, without written permission of Applied Technical Services, Inc.

Test Number: 46663

Asset Number: CH05770

Desc: Extech / RH520, Temp/Humidity Recorder

1049 Triad Court  
Marietta, GA 30062  
Phone: 770-423-1400

www.atslab.com

Page 2 of 2

ATTACHMENT B

**Data Recording Equipment and Storage Procedure:  
Temp/ Humidity in The Soil Dynamics Laboratory (ECJ 6.408)**

1. Equipment for Data Storage Using This Procedure:

RECORDING EQUIPMENT	DESCRIPTION	SERIAL NUMBER
Extech RH520	Temp/ Humidity Recorder	CH05770

2. Calibration of Recording Equipment

The measuring/ recording equipment has been calibrated using reference equipment with calibrations that are traceable to the National Institute of Standards and Technology (NIST).

Reference : Certificate of Calibration (Certificate #46663)

3. Use of Equipment in the RCTS Testing

The primary use of this temperature and humidity measuring equipment is used to record these parameters in the Soil Dynamics Laboratory in ECJ 6.408 in which samples and equipment for resonant column and torsional shear (RCTS) and unconfined, free-free, resonant column (URC) tests are stored.

4. Allowable Temperature and Humidity

The temperature and humidity in the Soil Dynamics Laboratory in ECJ 6.408 should range from 33°F to 100°F and from 5% to 100%, respectively. If the limits are exceeded, then the sample and its container are examined for deterioration due to changes in the volume and water content of the sample. If there is evidence of any change, the sample is red tagged with the note : "unfit for undisturbed tests".

*unsuitable  
BHL 4/1/2008*

5. Data Storage Procedure

The data from Temp/ Humidity Recorder are transferred onto a floppy disk once every month. The contents of the disk are presented in a plot as a graphical representation of the collected data (Example plot is attached). Twenty data points in the plot are manually compared with the raw data initially collected and transferred onto a floppy disk. The file containing the plot is saved on the same disk with the raw data. This disk is set to write-protection and affixed with a seal for prevention of data modification. Two digital and hard copies of the data are created. The first set of the digital (first floppy disk) and hard copies of the data is placed in a fire-resistant filing cabinet in ECJ 9.227. The second set of digital (second floppy disk) and hard copies of the data is placed in a locked cabinet in the Soil Dynamics Laboratory in ECJ 6.408.

Written by

*Ed Younglee*  
Ed Younglee

*4/1/2008*

Checked by

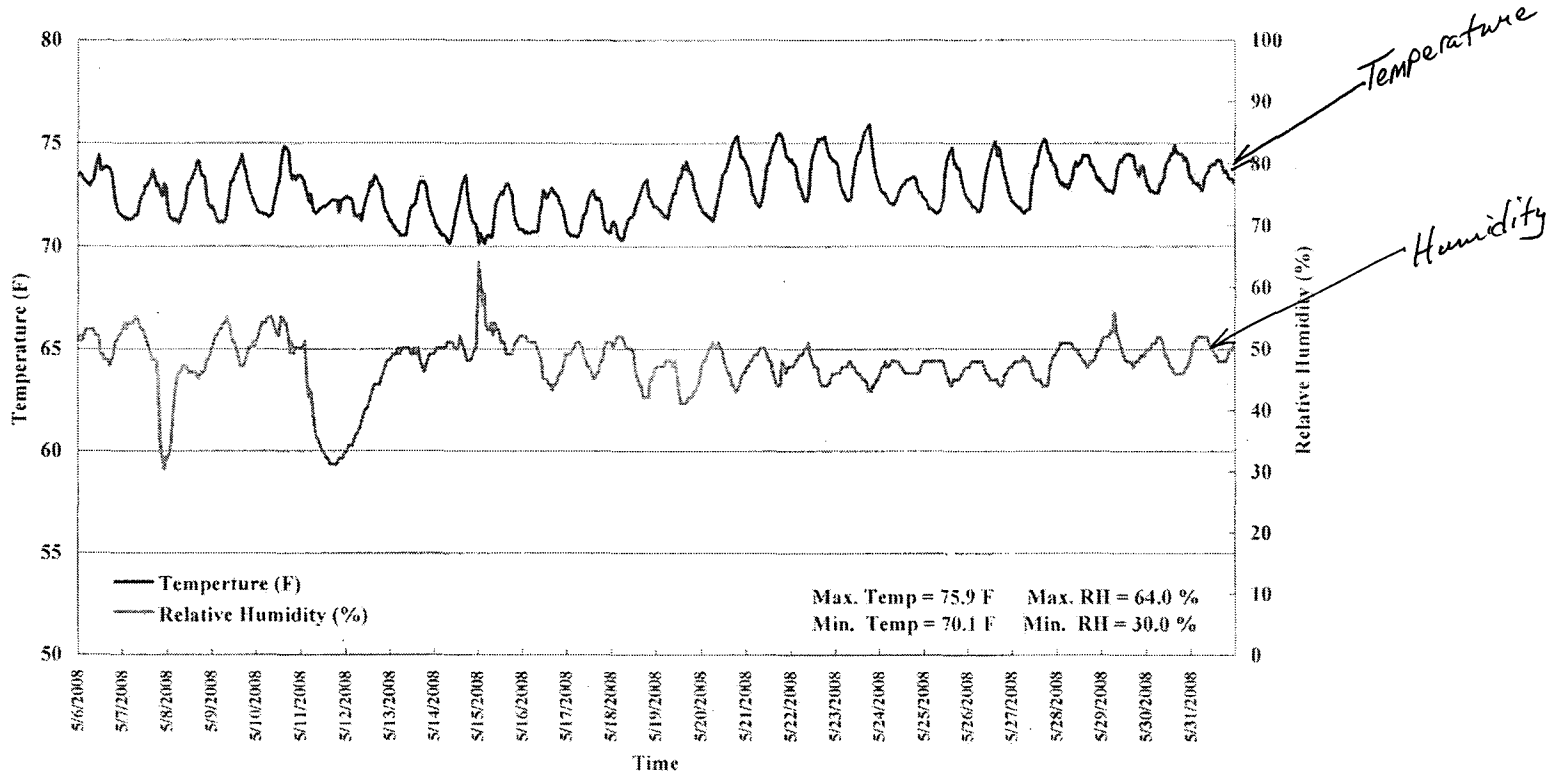
*K. H. Stokoe II*  
Kenneth H. Stokoe, II

*2 Apr. '08*



ATTACHMENT C

## Temperature and Humidity



### Instrument Information

Manufacturer : Extech  
 Model No : RH520  
 Serial No : CH05770

Calibration Date : 3/31/2008  
 Calibration Due Date : 3/31/2009

Data saved on : 6/1/2008  
 Next date for save\* : 7/1/2008  
 Note : \* Data backup is scheduled on the first day of the month.

Created by : *Bohyoung Lee BHL 6/1/2008*

Checked by : *Wonkyung Chui WKC 6/1/2008*