

SPECTRUM TECHNOLOGIES  
USA, Inc.

133 Wall Street  
Schenectady, N.Y. 12305

Tel: 518-382-0056  
Fax: 518-382-0283

February 9, 1993

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

Subject: REPLY TO NOTICE OF NONCONFORMANCE 99901119/92-02-01

Dear Sir:

The Nuclear Regulatory Commission (NRC) performed an inspection of Spectrum Technologies USA, Inc. on December 7 through 10, 1992. The scope of this inspection included Spectrum's 10 CFR Part 21 program, our quality assurance program, and its implementation in qualifying items for safety-related use in accordance with the requirements of Appendix B to 10 CFR Part 50. The inspection report cited Spectrum for one nonconformance to the requirements of 10 CFR Part 50, Appendix B, as follows:

"Contrary to Criterion XII, "Control of Measuring and Test Equipment", of Appendix B to 10 CFR Part 50, Spectrum Technologies USA, Incorporated, (Spectrum) improperly calibrated or did not calibrate all scales of their Wilson Instruments Co. Model B504T Rockwell Hardness Twintester, used during performance of measurements of items tested under their quality assurance (QA) program and provided to nuclear licensees for use in safety-related applications. (Nonconformance 99901119/92-02-01)"

Your letter of January 14, 1993 requested a written explanation within 30 days, including: "(1) a description of steps that have been or will be taken to correct these items; (2) a description of steps that have been or will be taken to prevent recurrence; (3) the dates your corrective actions and preventive measures were or will be completed

Accordingly, Spectrum has taken the following actions:

1. Description of steps that have been or will be taken to correct these items:

Immediate Action:

At the suggestion of Wilson Instruments, during the NRC inspection, a calibration check log was implemented for logging the daily calibration checks. This log shall be periodically reviewed by Quality Assurance for trends that would be indicative of "drifting" of the instrument. Additionally, a calibration check procedure has been posted at the instrument to help assure that the checks are performed properly. This procedure was explained in detail to Spectrum's technicians. A copy is attached.

180050

*Spectrum Sets Standards Above The Standards*

9302190160 930209  
PDR QA999 EMVSPECU  
99901119 PDR

*Out NO PG49138414*

*IF09  
1/1*

Arrangements were made for Wilson Instruments to calibrate and service Spectrum's Rockwell hardness tester.

Supplementary Action:

On December 14, 1992 a representative from Wilson Instruments, Co. (Mr. R. Case) serviced and calibrated Spectrum's Model 504T Rockwell Hardness Tester (A copy of the Certificate of Calibration and Inspection Report is attached).

The calibration was performed in accordance with ASTM E18-89a "Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials". The calibration and servicing of the Rockwell Hardness Tester was witnessed by the then Manager of Quality Assurance (now Vice President for Quality Assurance), the Manager of Inspection and Test and Spectrum's Test Technicians.

After servicing the instrument, Mr. Case performed preliminary hardness tests on three standards each (high, medium and low hardness range for each scale) for the A, B, C, N, and T Rockwell scales. The average of these five preliminary tests on each standard was recorded on the inspection report as the "As Found ("F)" condition. The equipment was found to be in good condition with all of the "as found" readings within the tolerance specified by ASTM E18-89a. Adjustments were made, where necessary, to "fine tune" and further improve accuracy. Five additional tests were then performed on each standard, and their average recorded as the "As Left ("L)" condition.

Additionally, all of Spectrum's check standards were inspected by the Wilson Representative and found to be acceptable.

Based on the instrument having been found to be within the tolerances specified by ASTM E18-89a, it is concluded that any tests conducted since the last calibration performed by Wilson Instruments Co. (i.e., January 1991) have been within tolerance.

2. Description of steps that have been or will be taken to prevent recurrence:

In addition to performing the calibration and servicing, the Wilson Representative provided a training seminar/refreshers on the proper operation of the equipment to all of Spectrum's technicians. This action provided all technicians with a better understanding of the instrument and the process. Similar refresher training will be conducted on future Wilson visits for annual calibration and servicing of the instrument.

Future annual calibration and servicing of Spectrum's Rockwell hardness tester will be performed by representative(s) from Wilson Instruments, Inc., and witnessed by Spectrum.

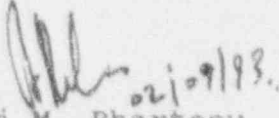
3. Dates your corrective actions and preventive measures were or will be completed:

Spectrum considers the action to correct the subject nonconformance to be complete. Wilson Instruments Co. will continue to be used for this service.

I want to assure you that Spectrum strives to maintain the highest level of quality in strict conformance with all applicable requirements and regulations.

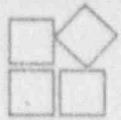
If any additional information is needed, please feel free to contact me at (518) 382-0056

Very truly yours,

  
Brij M. Bharteey  
President

Attachment:  
As stated

cc: Chief, Vendor Inspection Branch  
Division of Reactor Inspection and Licensee Performance  
Office of Nuclear Reactor Regulation



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USA, Inc.

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### ROCKWELL HARDNESS TESTER CALIBRATION CHECK PROCEDURE

1. Calibration checks shall be performed each day that the Rockwell Hardness Tester is used.
2. Before making the check, make at least two preliminary indentations to ensure that the hardness testing machine is working freely and that the test block, indenter, and anvil are seated correctly. The results of these indentations should be ignored.
3. Make at least three hardness readings on a standardized hardness test block **on the scale and at the hardness level at which the machine is being used**. If the mean of these values falls within the tolerances marked on the standardized hardness test block, the machine may be regarded as satisfactory. If not, advise the Manager of Inspection and Test, and do not use the machine on that scale until it has been formally calibrated.
4. Upon being advised that the Rockwell Hardness machine has failed to pass a calibration check, the Manager of Inspection and Test shall:
  - a. Take action (i.e., post a sign and advise all Inspector/Testers) to restrict further use of the machine on the suspect scale.
  - b. Advise the Vice President for Quality Assurance.
  - c. Arrange for servicing/calibration of the hardness tester.



# MANUFACTURER'S CERTIFICATE OF CALIBRATION FOR **Wilson®** ROCKWELL® HARDNESS TESTER

Company:

SPECTRUM TECHNOLOGIES  
133 WALL ST.  
SCHENECTADY NY

Calibration Date: DEC. 14 1992

Calibration Expires: DEC 1993

Machine Description:

Model # 504T

Serial # 93979012

Certificate # 863

Using Wilson® Instruments test blocks calibrated on a verified Laboratory Standard Tester in the Wilson® Standards Laboratory\*, with load and depth measuring devices traceable to the National Institute of Standards and Technology, an average of five tests produced results within the tolerance specified in ASTM Standard E-18-89a. Tests were performed with a Master Brale Diamond Penetrator and/or a Master Ball Penetrator. The Calibration Standards and Methods used for issuance of this Certificate meet the requirements of MIL STD-45662A.

THE CALIBRATION OF THIS EQUIPMENT MEETS THE ORIGINAL EQUIPMENT MANUFACTURER'S SPECIFICATIONS OF Wilson® INSTRUMENTS, INC.

The following test blocks were utilized to verify the ranges according to procedures in ASTM E-18-89a and MIL STD-45662A.

STANDARD	SERIAL #	STANDARD	SERIAL #	STANDARD	SERIAL #
<u>C62.6</u>	<u>9109557</u>	<u>C45.4</u>	<u>91993467</u>	<u>C24.4</u>	<u>91522753</u>
<u>B93.5</u>	<u>91091813</u>	<u>B16.86</u>	<u>92576263</u>	<u>B50.4</u>	<u>92576658</u>
<u>30N79.8</u>	<u>9109590</u>	<u>30N64.7</u>	<u>92310651</u>	<u>30N44.1</u>	<u>92529343</u>
<u>30T77.4</u>	<u>90004660</u>	<u>30T70.5</u>	<u>90N34923</u>	<u>30T55.6</u>	<u>90N36594</u>
<u>A82.9</u>	<u>82C55755</u>	<u>A72.1</u>	<u>82C54233</u>	<u>A63.3</u>	<u>82516228</u>

*Note: Calibration performed and witnessed at Spectrum Technologies*

**Wilson®** Instruments, Inc.  
6 EMMA STREET  
BINGHAMTON, NY 13905  
1-800-695-4273

Representative Neal H. Hone

\*The Hardness standards maintained by Wilson Standards Laboratory are those originally developed by Stanley P. Rockwell in 1919.

# Wilson Instruments Inc.

6 EMMA STREET  
BINGHAMTON, NY 13905-2508  
(607) 4500

518382 0056



Manager Quality

Assurance

SERVICE DUE

Dec 97

## INSPECTION REPORT

P.O. \_\_\_\_\_  
F.S.R. 050333  
L 295.00  
T /  
PARTS 415.00  
PHONE

Report To: SPECTRUM TECHNOLOGIES

Date: 12/14/97

133 WALL ST.

SCHENECTADY NY 12305

Attention ORICK FERNANDEZ Person's Interviewed:

\*F - Tester Reading as Found  
\*L - Tester Reading as Left

### HARDNESS OF STANDARDIZED BLOCKS

Serial No. of Tester	Location	30N718	30N647	30N441	30T774	30T705	30T556	Cond. of Tester
	STDS	C62.1	C45.4	C24.4	B935	B686	B504	
ID4T9398902	INSP.	*F 63.0	46.1	25.1	93.9	68.4	50.1	
		*L 62.4	45.8	24.7	94.1	69.2	50.9	
		*F 79.2	64.0	43.3	76.6	70.0	52.1	
		*L 79.5	64.5	43.8	77.0	70.6	56.0	6000
		*F						
		*L 82.9	72.1	63.3				
		*F 82.2	71.9	62.8				
	ASTM	*L 83.1	72.5	63.0				
		*F						
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Comments & Recommendations: Clean Calibration & Certify to ASTM E18

Replaced #410 CBRACE #2015 NBRACE #305 K6 BALL PEN CAP  
#990183 A83 TEST BLOCK #31277 LIGHT BULB

PERIODIC SERVICE RECOMMENDED EVERY

12

MONTHS

CERTIFICATE FURNISHED

REPAIR ORDER ATTACHED? YES ( ) NO ( )

REPRESENTATIVE

*Amil*

CUSTOMER