



nxl | Engineers, Surveyors
Construction Managers

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NMSB3

April 9, 2007
Nuclear Regulatory Commission
475 Allendale Road
King Of Prussia, PA. 19406-1415

03037148

Reference: Amendment to License Number 45-31134-01

Dear Sirs:

In accordance with the safety inspection and compliance inspection made by Mr. James Schmidt of your office on March 20, 2007, NXL is requesting our license be amended for the following:

10. Radiation Safety Program

Radiation Detection Instruments

NXL does not own or rent any nuclear gauges but uses gauges belonging to the Virginia Department of Transportation for any density testing that our employees perform; therefore VDOT has the survey meter listed below available in their nine Districts Offices throughout the Commonwealth of Virginia for use in the event of an incident involving the gauge.

Manufacturer: Geiger-Muller (G-M)

Model: 44-38

Type: g-m survey meter

Radiation detected: beta, gamma

Sensitivity range: up to 50 mR/hr without instrument dead time correction and up to 500 mR/hr with dead time correction. Dead time correction typically 95 microseconds

The firm that calibrates VDOT survey meters is as follows:

AKM Calibrations

InstroTek, Inc.

5908 Triangle Drive

Raleigh, NC. 27617

Please note I have attached a copy of the spec sheet for the Model 44-38 Beta-Gamma Detector as well as a copy of the calibration report.

Should you have any questions, please contact me at (804)644-4600.

140380

NMSS/RGN1 MATERIALS-002



nxl Engineers, Surveyors
Construction Managers

Sincerely,

NXL CONSTRUCTION SERVICES, INC.

James E. Harpine
Director CEI Services

Attachments

headquarters / 114 east cary st / suite 200 / richmond va 23219 / p 804 644 4600 / f 804 644 4674 / nxl.com

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE James E. Harpine, Director CEI Services				SIGNATURE 		DATE 4/9/07
FOR NRC USE ONLY						
TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED \$	CHECK NUMBER	COMMENTS	
APPROVED BY				DATE		

Model 44-38 Beta-Gamma Detector

1. GENERAL

The Model 44-38 is a Geiger-Mueller (G-M) beta/gamma survey detector that can be used with any portable ratemeter or scaler instrument that provides 850-1200 volts with an input sensitivity of 30 ± 10 mV.

The detector incorporates a rotary shield, which when opened, allows the detection of beta radiation for energies above approximately 200 keV. The beta contribution from a measurement can be determined by subtracting the reading with the rotary shield closed from the reading with the shield open.

The response range of the M44-38 is nominally linear, (within $\pm 10\%$) up to 50 mR/hr without instrument dead time correction and up to 500 mR/hr with dead time correction. Dead time is typically 95 microseconds.

2. SPECIFICATIONS

- **OPERATING VOLTAGE:** 850-1200 volts (Recommended: 900 volts)
- **INPUT SENSITIVITY:** $30 \text{ mV} \pm 10 \text{ mV}$
- **DEAD TIME:** Typically 95 microseconds
- **BETA CUT OFF:** approximately 200 keV
- **ENERGY RESPONSE:** Within $\pm 15\%$ of true value from 50keV-1.25MV(closed window)
- **TUBE:** 30 mg/cm² stainless steel (Halogen quench) G-M
- **SIZE:** 1.3 inches (3.3 cm) diameter by 6.5 inches (16.5 cm) long
- **TEMPERATURE RANGE:** -4 °F (-20°C) to 122 °F (50°C)
May be certified for operation from -40 °(-40°C) to 150 °F (65°C)
- **BODY CONSTRUCTION:** Anodized aluminum housing for energy compensation
- **WEIGHT:** 1 lb (0.5kg)
- **CONNECTOR:** series "C;" other connectors available upon request

AKM Calibrations
InstroTek, Inc

Calibration Report/Certification
Radiation Safety Equipment

3908 Triangle Drive Raleigh NC 27617 p:919.875.8371 f: 919.875.8328

REPORT# 106441

PREPARED FOR:

We certify that the following meter was calibrated on the indicated date using an NIST traceable radiation field source

Model Ludlum Model 3 **SN** 164003
Detector 1 External SWGM Model 44-38 Pr 168058
Detector 2 None
ID None

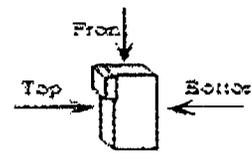
Date 11/4/2006
PO# Confirm B. Regimand
Contact InstroTek Inc
Calibrated By Robert D. Pearlstein

PRE-CALIBRATION CHECK

- Contamination No Yes: returned without calibration
- Batteries OK Replaced Used AC Power
- Audio OK Malfunction No Audio Function
- Probe OK Malfunction Repaired
- Cables OK Malfunction Repaired
- Switches OK Malfunction Repaired
- HV Circuit OK As Received Reset to 800V Repair/ret
- Pulse Detector OK Malfunction Repaired
- Electrometer OK Malfunction Repaired

CALIBRATION CONDITIONS

- Temperature (°F) 71 Relative Humidity 25% Pressure (mmHg) 760 +/- 10
- Radiation Beam / Detector Alignment:
- External Detector Internal Detector
- normal to long axis normal to top
- parallel to long axis normal to bottom
- normal to detector window normal to front
- Shield/Build-up Cap
- No shield Shield closed
- Shield open Build-up cap used



INSTRUMENT ACCURACY

UNITS: CALIBRATION SOURCE

mR/h (Cesium 137 photons)

AFTER CALIBRATION, Observed mR/h = True* mR/h ± 10%
 Cesium 137 photons. Normal field measurements can be made
 without the use of Scale Calibration Factors.

Note: None

METER CALIBRATION FACTORS

True = Observed x CF

Multiplier/Scale	CF
x.1	1.09
x1	0.98
x10	0.96
x100	1.00

OBSERVATIONS

Scale/Range	Observation 1 / Units: mR/h				2 / Units: mR/h		3 / Units: CPM	
	True*	As Found	As Returned	SFM	True*	As Returned	True*	As Returned
x.1	0.18mR/h	1.65	0.165	0.009	ND	ND	200 PPM	230 CPM
x1	1.6	1.63	1.63	0.02	0.4	0.4	2K	2.3K
x10	16	16.6	16.6	0.2	4	4	20K	23K
x100	150	150	150	ND	40	40	200K	210K

Note: SEM = Standard Error of Measurement, N = 10 Observations

COMMENTS

Meter calibrated for survey of photon radiation fields using mR/h Scale.

Handwritten signature and date: 11.14.06

SUGGESTED RECALIBRATION DATE: November 4, 2007

Reviewed by: _____

Robert D. Pearlstein Ph.D..

*True Cs 137 field (mR/h) estimated from NIST traceable source calibration data after correcting for source decay, source-probe geometry and filtration OR True PPM = electronically generated pulses per minute (PPS = per second). ND = Not Determined NA = Not Applicable NonL = Non-Linear

This is to acknowledge the receipt of your letter/application dated

4/9/2007, and to inform you that the initial processing which includes an administrative review has been performed.

AMEW. 45-31134-01
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned Mail Control Number 140380.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.