

VALMET Automation

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NUMBER OF PAGES: 3

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If you do not receive all pages indicated, please telephone immediately.

RALPH,

HERE IS THE CALIBRATION CERTIFICATE
FOR THE ION CHAMBER METER USED TO MAKE
THE TAPID RADIATION PROFILES WITH THE
200 mCi SOURCE.

Jim

Certificate of Calibration**Issued by: Winfrith Gamma Calibration Facility**

Environment and Energy
 Winfrith Technology Centre
 Dorchester
 Dorset
 DT2 8DH



Approved Signatory: **A J MURRAY**
J A SIMPSON

Date of Issue: **30 Jun 1993**

AEA TECHNOLOGY

Instrument Type: Smart ION Ser.No.: 2144Certificate No.: 06934297

METHOD: The instrument was exposed to a collimated beam of gamma radiation with its detector on the beam axis.

ORIENTATION: The instrument was mounted vertically with the beam normal to the closed shutter.

RESULTS

Source	Range	Dose Rate	Observed Reading	Fluctuation (Note 4)
Cs 137	50 mSv/h	500 mSv/h	FSD	
Cs 137	50 mSv/h	40 mSv/h	39.9 mSv/h	
Cs 137	50 mSv/h	10 mSv/h	9.5 mSv/h	
Cs 137	5 mSv/h	4 mSv/h	4.02 mSv/h	
Cs 137	5 mSv/h	1 mSv/h	1.03 mSv/h	
Cs 137	500 µSv/h	400 µSv/h	400 µSv/h	
Cs 137	500 µSv/h	100 µSv/h	98 µSv/h	
Cs 137	50 µSv/h	40 µSv/h	40.4 µSv/h	
Cs 137	50 µSv/h	10 µSv/h	10.2 µSv/h	
Am 241	50 µSv/h	25 µSv/h	22.6 µSv/h	
B/G	50 µSv/h	0.11 µSv/h	0 µSv/h	

POLAR RESPONSE CHECKS:

Additional measurements were made with the Am-241 beam normal to each side face and to the front end face.

The observed readings were: - 21.5 µSv/h, 20.4 µSv/h, 21.8 µSv/h, respectively.

Unsealed ionisation chamber. - Standard temperature and pressure 20 degrees Celsius, 1013 millibars.

Signed:-

Notes 1. Ambient dose equivalent rates are derived from measurements made by a dosimeter calibrated at the NPL, and assume that an air kerma of 1 Gy = 1.2 Sv for Cs-137, 1.15 Sv for Co-60 and 1.74 Sv for Am-241.

2. The uncertainty of dose rates 2 µSv/h and higher is ±3%, below 2 µSv/h is ±5%, and background is ±10%. The uncertainty in the dose rates from Am-241 is ±10%.

The uncertainties are for a confidence probability of not less than 95%.

3. The readings quoted are eye averages observed after the instrument has been exposed to a constant dose rate for a period sufficiently long to enable it to reach equilibrium.

4. If the fluctuation of the observed reading is ±10% of the average reading...

If the maximum of the readings was greater than 1.5 times the average reading, then the minimum and maximum observed readings have been stated.

5. Before using the instrument the user should be familiar with its characteristics (energy dependence, directional dependence etc.). Such information may be obtained from a type test report.

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