

From: Ken Smith <k.smith@scantech.com.au>
To: "Ujagar Bhachu" <USB@nrc.gov>
Date: 6/16/02 11:34PM
Subject: SS&D application for CM100, Scan Technologies

Dear Ujagar,

We are close to completing the revised SS&D application for the CM100. This will include a new radiation survey on a newly constructed CM100 source housing. I have avoided troubling you with questions since I agree it would be best to submit all our responses in a single package.

However there is one questions which I should ask you at the stage.

The neutron survey around the source housing was conducted with a Ludlum 12-4 calibrated by Ludlum In February 2002. Ludlum have confirmed that the meter was calibrated to ANSI N323.

The gamma survey was conducted with a Nuclear Enterprises PDM-1 dosimeter calibrated in Australia in March 2002. This calibration is directly traceable to national standards via the Australian Radiation Protection and Nuclear Safety (ARPANSA).

I have made enquiries as to the equivalence of this calibration with ANSI N323. Whilst international work is being carried out the equivalence of standards there appears to be no statements to that effect at present. I have attached an email from Steve Seltzer of NIST which I think summarises the position. Australia is a signatory to BIPM and it appears that progress is being made towards mutual recognition of standards. It also seems unlikely that there will be significant error in a dosimeter calibrated to the ARPANSA standard.

My question is whether the gamma dose rate figures we will provide will be acceptable to you?

A practical point is that the gamma dose rate figures are about half the neutron dose rates, so the neutron figures are the most critical from a radiation protection point of view.

Steve Seltzer has addressed me as Dr. Smith, I am in fact just a Mr. However, Ken is my preferred means of address.

Many Thanks

Ken Smith

From: Steve Seltzer [S.Seltzer@NIST.GOV]
Sent: Thursday, 9 May 2002 11:40 PM
To: Ken Smith
Subject: Re: Dosemeter calibration

Dear Dr. Smith,

To my knowledge there is no statement of equivalence among national standards at a legal/political level. Under the international Mutual Recognition Arrangement, the CIPM (through the BIPM near Paris) is compiling results of intercomparisons among national standards and presenting them in a matrix giving the levels of equivalence. You can look at their work on the web at <http://kcdb.bipm.fr/BIPM-KCDB/default.asp>. However, this is a mathematical statement, not a legal one. Unfortunately, there seems to be no numerical results available on the web yet for Ionizing Radiation (photons and electrons), so even the level of mathematical equivalence may be hard to reference (you might contact the BIPM for the status of these matrices).

As a practical matter, I cannot issue a formal declaration that the Australian standards and calibrations are equivalent to those in the U.S., although I personally have little doubt that they would be quite close in general. To address your particular calibrations, we would have to compare the results of the Australian calibrations with ours done for your instrument(s). Of course, then you could simply claim traceability to U.S. standards, without the complicated issue of equivalency, and satisfy the NRC. I assume you wish to avoid such an expense. A somewhat less expensive course of action would be to go to a secondary calibration laboratory traceable to NIST.

I am sorry that I have not been able to provide more help in this matter.

CC: Charles Cox; John Jankovich; Marissa Bailey

Mail Envelope Properties (3D0D58BF.D26 : 15 : 32038)

Subject: SS&D application for CM100, Scan Technologies
Creation Date: 6/16/02 11:21PM
From: Ken Smith <k.smith@scantech.com.au>

Created By: k.smith@scantech.com.au

Recipients

nrc.gov

twf4_po.TWFN_DO

USB (Ujagar Bhachu)

Post Office

twf4_po.TWFN_DO

Route

nrc.gov

Files

MESSAGE

Mime.822

Size

3428

4206

Date & Time

06/16/02 11:21PM

Options

Expiration Date:

None

Priority:

Standard

Reply Requested:

No

Return Notification:

None

Concealed Subject:

No

Security:

Standard