

01 June 2010

7/A

Mr John Leggott
Gaffer Coloured Glass Limited
2 Collins Street
Morningside
AUCKLAND

Dear Sir

Uranium Glass

The radiation levels from a 320 gm piece of 2% uranium Green G-038 glass were measured with a Thermo Scientific FH 40 G-L radiation survey meter, s/n 19375. The meter was calibrated in April 2010.

There was no detectable gamma radiation field at 30 cm from the glass.

There was a small beta radiation field on the surface of the glass but this is of no significant health hazard and it is perfectly safe to handle the glass.

A summary of a detailed analysis of the exposure rates from uranium in glassware can be found at www.ornl.gov/ptp/collection/consumer%20products/vaseline.htm

The original article can be accessed at www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1717/nureg-1717.pdf

The calculated dose rate at 30 cm from a piece of decorative glassware containing 10% uranium was 1.8×10^{-3} mrem/hr. This is $1/5^{\text{th}}$ of the natural background gamma radiation level of approximately 1×10^{-2} mrem/hr. With a lower percentage of uranium the dose rate will be correspondingly lower.

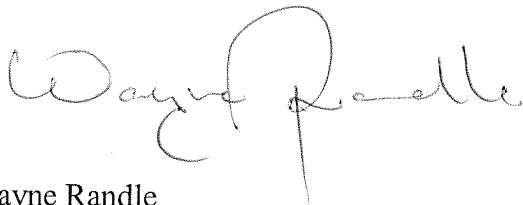
The beta dose rate to the hands was 27mrem/hr and the effective whole body dose rate was 2.7×10^{-3} mrem/hr.

To put these dose rates in to context we all receive approximately 200 mrem per year from natural background.

I have expressed the dose rate in millirem per hour (mrem/hr) since these are the units that the Americans use. The relationship between mrem/h and the units that the rest of the world use microsieverts per hour ($\mu\text{Sv/h}$) is that $10 \mu\text{Sv/h}$ is equivalent to 1 mrem/hr.

The use of this glass as architectural glass poses no significant radiation health hazard.

Yours faithfully

A handwritten signature in cursive script, appearing to read "Wayne Randle". The signature is written in black ink and is positioned above the typed name.

Wayne Randle
Scientific Advisor