



Janice K. Brewer
Governor

Aubrey V. Godwin
Director



4814 South 40th Street

Phoenix, Arizona 85040-2940

(602) 255-4845
Fax (602) 437-0705

September 30, 2013

ARRA INFORMATION NOTICE **2013-IN-07**:

THE NEED TO REVIEW/IMPLEMENT ADEQUATE SURVEY PROCEDURES FOR DETERMINING THE AMOUNT OF CONTAMINATION ON THE EXTERIOR SURFACE OF A PACKAGE CONTAINING RADIOACTIVE MATERIAL

ADDRESSES

All licensees who make shipments of radioactive material are required to survey the exterior surface of a package containing radioactive material in accordance with A.A.C. R12-1-433. The action level for this survey is 6600 dpm for wiping a minimum surface area of 300 cm². This survey is important because ambient surveys are not required on all radioactive material packages, whereas wipe surveys for contamination are required.

PURPOSE

The Arizona Radiation Regulatory Agency is issuing this information notice (IN) to inform licensees of the accepted methodologies for determining how much contamination is on a package before it is placed into transport mode, or opened upon receipt from a radioactive material supplier.

DESCRIPTION OF CIRCUMSTANCES

The Radioactive Materials Program is finding many licensees who are not evaluating the wipe sample to a level that would discover regulatory quantities of contamination on the external surface of a package. This survey is important, as noted above, and as described in the survey guide diagram provided in the Agency Medical License Application.

DISCUSSION

Here are a few examples for evaluating package wipe samples. The common choice is a well counting system, which is often used in performing thyroid uptakes in a nuclear medicine laboratory, or is an option attached to a dose calibrator. Another option would be a digital survey meter with a built in scaler system which is used with an appropriate probe. Either a pancake GM or scintillation probe would be acceptable. Lastly, a rate survey meter with a scintillation probe would be acceptable under certain conditions of use described below. Due to the radiation sources which are stored in the controlled environment of a "Hot Lab," it is important that the high background radiation in the lab does not interfere with the counting of the contamination on the wipe sample. Most well systems are shielded adequately or are located in a separate room where patient uptakes can be conducted. The remaining equipment will require extensive shielding of the probe so that a reasonable Minimal Detectable Activity (MDA) can be achieved. With shielded background in the range of 200 cpm, the regulatory action level should be achievable for the equipment being used.

In addition to the shielding, the geometry must be considered. The geometry must be maintained or constant during the counting process. Counting trays/stands are available from some manufacturers that will aid in maintaining the geometry, and a NBS traceable reference source will be needed to establish the efficiency for the counting system that will be used.

CONCLUSION

Agency inspectors will continue to look at the wipe survey counting procedures as part of a licensee's routine inspection. Depending on the findings, a violation may be cited if it appears the methods used are unable to detect the action level expressed in A.A.C. R12-1-433. It is recommended a licensee's procedures be submitted to the Agency for review if there is any question as to whether the methods employed are acceptable.

Should a registrant find the Agency's position unacceptable, a written request for a variance should be sent to the Agency, stating why it is not acceptable, with a description of the counting system that is proposed and why it is believed to be a better system.

If there are any questions or concerns regarding this informational notice, please contact Brian Goretzki, Program Manager of the Radioactive Materials Program, at 602-255-4845 ext 234.

Sincerely,

Aubrey V. Godwin, M.S., C.H.P.
Director

DK:AVG:hlh