KANSAS
DEPARTMENT OF HEALTH & ENVIRONMENT
BILL GRAVES, GOVERNOR
Clyde D. Graeber, Secretary

August 30, 2002

KANSAS INFORMATION NOTICE 02-03: **MEDICAL MISADMINISTRATIONS CAUSED BY FAILURE TO PROPERLY PERFORM TESTS ON DOSE CALIBRATORS FOR BETA- AND LOW-ENERGY PHOTON-EMITTING RADIONUCLIDES**

Addressees

All nuclear pharmacies and medical licensees.

Purpose

To inform addressees of the lessons learned from an event involving multiple misadministrations due to inaccurate measurement of dosages of beta-emitting radiopharmaceuticals and remind them of the importance of conducting proper tests of the dose calibrator when measuring beta- and low-energy photon-emitting radiopharmaceuticals and liquid brachytherapy sources (samarium-153, strontium-89, yttrium-90, phosphorus-32, and iodine 125).

Description of Circumstances

In December 2001, NRC became aware of 61 medical misadministrations at nine Midwestern hospitals that occurred between 1997 and 2001 as a result of inaccurate measurement of the samarium-153 unit dosages by a commercial nuclear pharmacy. The hospitals were not required to measure the dosages in dose calibrators because they ordered unit dosages of the beta-emitting radiopharmaceutical from a nuclear pharmacy licensed under 10 CFR Part 32 [see 10 CFR 35.53(b)]. In these cases, as provided in NRC's regulations, the hospitals relied solely on the nuclear pharmacy to provide the correct dosages of beta-emitting (samarium-153) radiopharmaceuticals. In 1994, another medical licensee reported potential phosphorus-32 and strontium-89 misadministrations caused by the licensee's use of a dose calibrator that was not properly calibrated for those radionuclides or the geometry of the material being measured. It should be noted that Kansas licensees are required to measure the dosages of unit doses.

Discussion

This information notice discusses the potential sources of errors in measurement of beta- and low-energy gamma-emitters, inaccurate measurement of samarium-153, inaccurate measurement of phosphorus-32 and strontium-89 and accurate measurement of beta- and low-energy photon-emitting radionuclides.

This information notice does not require any specific action or written response. If you have any questions about the information in this notice, please do not hesitate to contact this office.

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